

# Sydney Metro North West

Design and Construction of Surface and Viaduct Civil Works



## **Construction Traffic Management Plan**

**(Including WAD Prescribed Traffic Management & Safety  
Plan Requirements)**

**NWRLSVC-ISJ-SVC-PM-PLN-120202**

**Revision 11.0**

**14 November 2016**

# Construction Traffic Management Plan

Surface and Viaduct Civil Works



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Signature

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## Definitions and Abbreviations

Abbreviations	Definition
Affected road	Any road or road reserve which crosses, is adjacent to, or is
Ambient Level	Existing level of a phenomenon without the influence of construction activities
ANZECC	Australian and New Zealand Environment Conservation Council
AS 1348	Road and Traffic Engineering
AS 1742	Manual of Uniform Traffic Control Devices (15 Parts) standard
AS/NZS 3845	Road Safety Barrier Systems standard
AS 4192	Illuminated flashing arrow signs standard
AS/NZS 4360	Risk Management standard
BCC	Blacktown City Council
BMTMC	Business Manager Transport Management Centre (TfNSW)
BoM	Bureau of Meteorology
CCTV	Closed Circuit Television
CEMF	Construction Environmental Management Framework
CEMP	Construction Environmental Management Plan
CLIP	Community Liaison Implementation Plan
CM	Construction Manager(s) (ISJV)
CNI	A type of information systems development software
CTCP	Construction Traffic Control Plan
CTEMP	Construction Traffic Environmental Management Plan
CTMP	Construction Traffic Management Plan
CTMSP	Construction Traffic Management Sub-Plan
CVMP	Construction Vehicle Management Plan
DP&I	Department of Planning and Infrastructure
DTR	Direction To Restrict Regulatory Speed Limits
EIS	Environmental Impact Statement
EM	Environment Manager (ISJV)

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Abbreviations	Definition
Emission	A discharge of a substance (e.g. dust) into the environment
EMS	Environmental Management System
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	Environment Protection Authority
EPL	Environment Protection Licence
ER	Independent Environmental Representative
IC	Independent Certifier
SI-BMS	Salini Impregilo S.p.A. (Australia) – Business Management System
Incident	Any unplanned or undesired event which results in or has potential to result in injury, ill health, damage, to or loss of property, interruption to operations or environmental impairment. An incident also includes a near miss, breach of procedure, quality failure, injuries to employees, contractors or members of the public and any other statutorily reportable occurrence.
ISJV	Salini Impregilo S.p.A. (Australia) and Salini Australia Pty Ltd Joint Venture / Principal Contractor
MCoAs	Ministers Conditions of Approval
Mitigation Measures	Measures employed to reduce (mitigate) an impact
Movement	Two-way traffic movement into and out of the site. e.g. 1 x movement is equivalent to 1 x vehicle entering the site and 1 x vehicle exiting the site.
NOW	NSW Office of Water, Department of Primary Industries
NWRL	North West Rail Link
OEH	Office of Environment and Heritage
PARAMICS	Micro-analytical traffic evaluation tool that employs lane-by-lane and vehicle drive cycle models for intersection capacity, level of service and performance analysis
PIRMP	Pollution Incident Response Management Procedure
PMP	Project Management Plan
PAMP	Pedestrian and Access Management Plan
PaMP	Parking Management Plan
PMS	Project Management System
POEO Act	Protection of the Environment Operations Act 1997
Police	NSW Police Service

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Abbreviations	Definition
Pollution	The alteration of air, soil, or water as a result of human activities such that it is less suitable for any purpose for which it could be used in its natural state
REMM	Revised Environmental Mitigation Measures
RMS	Roads and Maritime Service (formerly RTA)
ROL	Road Occupancy Licence
ROM	Transport Management Centre Road Occupancy Manual (2012)
ROP	Council Road Opening Permit
RSA	Road Safety Audit
SE	Site Engineer
SETMP	Special Event Traffic Management Plan
SIDRA	Traffic signal layout design software analysis tool
SSERP	Site Specific Emergency Response Plan
SSI	State Significant Infrastructure
SVC Works	Surface Viaducts and Civil Works, for the North West Rail Link Project
SWTC	Scope of Work and Technical Criteria
TCG	Traffic Coordination Group
TCP	Traffic Control Plan
TCS	Traffic Control Signal
TCWS	Roads and Maritime Services (RMS) Traffic Control at Work Sites
TCWSM	RMS Traffic Control at Work Sites Manual
TfNSW	Transport for New South Wales
THSC	The Hills Shire Council
TIRP	Traffic Incident Response Plan
TMA	Truck Mounted Attenuator
TMC	TfNSW Transport Management Centre
TTLG	Traffic and Transport Liaison Group
TMP	Traffic Management Plan
TSC	Tunnel, Station and Civil (TSC) Works of the North West Rail Link

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Abbreviations	Definition
VMP	Vehicle Movement Plan
VMS	Variable Message Sign
WAD	Works Authorisation Deed
WHS	Work Health & Safety

## 1 INTRODUCTION

### 1.1 Purpose

This Construction Traffic Management Plan (CTMP) forms part of the Construction Environmental Management Plan (CEMP). The CEMP and CTMP forms part of ISJV's Quality Safety and Environment management framework and overarching Business Management System as described in section 1.8 of the CEMP.

This CTMP identifies and defines the requirements, actions, management processes, obligations and responsibilities for traffic management during the construction of the SVC Works in accordance with the:

- Minister's Conditions of Approval (MCoAs),
- TfNSW's Revised Environmental Mitigation Measures (REMM) deed and
- SWTC Appendix 9-G10 Traffic Management,
- TfNSW's Construction Environmental Management Framework (CEMF),
- the Sydney Metro North West SVC Contract,
- the Traffic Management & Safety Plan referenced in Clause 18.2 of the SVC Works Authorisation Deed (WAD) and
- All applicable legislative and contractual requirements.

ISJV will undertake all work necessary to provide for the safe movement of pedestrians, cyclists, public transport services and road traffic and the protection of persons and property around the Construction Site and all other areas affected by the Project Works, the Temporary Works and the Contractor's Activities.

This plan complies with ISJV-SVC-PMS which in turn is derived from SI-BMS. Refer to the Project Management Plan System ISJV Project Management System (PMS) matrix.

### 1.2 Principles

The guiding principles of the SVC Works Delivery and incorporated into this plan are to ensure:

- The provision of a safe environment for road users, pedestrians, cyclists and workers;
- Any impact on road users and asset operation is kept to a minimum;
- Access is maintained for the local community, transport operators, (including over-dimension load movements) and commercial developments;
- Road users, local businesses, Local Councils, Emergency Services, stakeholders and local communities are regularly informed in relation to changed traffic conditions; and
- There is sufficient advance warning of changes to normal traffic conditions.

### 1.3 Scope

This plan includes the provisions or how the outcomes of the provisions, as a minimum, are to be achieved.

The CTMP provides details of how construction traffic will be managed by the ISJV in line with the Impregilo's Business Management System, relevant Australian Standards, industry & manufacturer's guidelines, specifications and the Design and Construction of Stations and Viaducts Civil Works Project Deed requirements.

This CTMP implementation will ensure that the project quality process and activities are managed efficiently to consistently satisfy the Design and Construction of Surface and Viaducts Civil Works Project Deed requirements.

The project CTMP will be available to all the ISJV employees, suppliers, client including their representatives, Independent Certifier and other stakeholders. All employees and suppliers are required to comply with the CTMP as well as ISJV management system requirements and adhere to their nominated authorities and responsibilities.

The work methods, practice and controls contained within will be applied to all processes and activities undertaken by ISJV on the Design and Construction of Stations and Viaducts Civil Works Project.

### 1.4 Exclusions of this Plan

The following items are not included in this plan:

- Work method statements [please refer to iTWOcx documentation]
- Schedule setting out all notices, tests, hold points and witness points [please refer to iTWOcx documentation included within the Quality Management Plan - NWRLSVC-ISJ-SVC-PM-PLN-120100 ISJV Project Quality Plan]
- Design of temporary WAD access/egress points [refer to DL85.03]
- Construction Environmental Management Plan [refer to NWRLSVC-ISJ-SVC-PM-PLN-120200]
- Spoil Management Plan [refer to NWRLSVC-ISJ-SVC-PM-PLN-120212]
- Pollution Incident Response Management Plan [refer to NWRLSVC-ISJ-SVC-PM-PLN-120214]
- Stormwater & Flooding Management Plan [refer to NWRLSVC-ISJ-SVC-PM-PLN-120215]

#### □ Prescribed Plans:

- Maintenance Plan [refer to NWRLSVC-ISJ-SVC-PM-PLN-121500 ISJV Monitoring & Protection Plan] ,
- Quality Plan [refer to: NWRLSVC-ISJ-SVC-PM-PLN-120100 ISJV Project Quality Plan],
- Emergency Response Plan [refer to: NWRLSVC-ISJ-SVC-PM-PLN-120900 ISJV Site Specific Emergency Response Plan], and
- Monitoring Plan [refer to: NWRLSVC-ISJ-SVC-PM-PLN-121500 ISJV Monitoring & Protection Plan].

### 1.5 Plan Preparation and Review

This CTMP provides the overarching construction traffic management framework and strategy. ISJV will prepare a site-specific and detailed CTMSP for each of the work sites listed in Table 1-1 and detailed in the Construction Management Plan. Each sub-plan will outline the overall traffic management staging for the individual work sites to minimise traffic impact and maximise safety. A Construction Traffic Control Plan (CTCP), for each traffic stage at each work site, will be developed and attached to each work site-specific CTMSP (as required) and will be submitted for final approval by road authorities (Roads and Maritime Services and for the information of relevant Councils) and other relevant stakeholders for temporary pedestrian, cyclist, public transport service and road traffic arrangements, including the installation of and changes to any regulatory traffic control devices, road or thoroughfare prior to implementation.

The plan has been reviewed and prepared in consultation with the following road authorities:

- Roads and Maritime Services
- Blacktown City Council (BCC)
- The Hills Shire Council (THSC)
- The Transport Management Centre (TMC)

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The plan has been reviewed and prepared in consultation with the following stakeholders:

- Bus operators: CDC & Busways
- TfNSW
- NSW Police
- Hornsby Council
- Fire & Rescue
- Ambulance

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Table 1-1: Schedule of Zones

CTMS P #	Work site	Description	Primary Access/Egress Point	Primary Access Hours	Estimated Vehicle Movements	Indicative Construction Timeframes
1	Bella Vista Construction Area	From TSC to Balmoral Road	Access/Egress: Balmoral Road Access/Egress: Memorial Avenue	<p><i>Standard Working Hours:</i></p> <p>7am–6pm on weekdays</p> <p>8am–1pm on Saturdays</p> <p>No works on Sundays or Public Holidays or during special events protocols as advised by TMC</p> <p><i>Planned Out of Hours Works:</i></p> <p>Deliveries and night-time intersection works may be required due to the Road Authority:</p> <p>Haulage requirements due to oversized vehicles and the Construction requirements at or over road intersections.</p> <p><i>Out of hours works may take place without approval in an emergency to avoid the loss of lives, property and/or to prevent and/or to prevent environmental harm.</i></p>	<p>Earthworks (excavation): Up to 20 movements per hour peak or 80 movements per day; these activities would occur after the morning arrival peaks and prior to the afternoon departure peaks</p> <p>In-situ Concrete Works: Up to 12 movements per hour peak or 96 movements per day; these activities would occur after the morning arrival peaks and prior to the afternoon departure peaks</p> <p>Pre-cast Segment Delivery: deliveries anticipated to be undertaken at night between 11:00 pm and 5:00 am, subject to the Road Authority Approvals, thence will be occurring prior to the morning arrival peaks and after the evening departure peaks. Vehicle movements anticipated to peak at 2 per hour or 10 per shift for 50 weeks.</p>	May 2015 to Jan 2017



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CTMS P #	Work site	Description	Primary Access/Egress Point	Primary Access Hours	Estimated Vehicle Movements	Indicative Construction Timeframes
2	Memorial Construction Area	From Balmoral Road to Memorial Avenue	Access/Egress: Balmoral Road Access/Egress: Memorial Avenue	<p><i>Standard Working Hours:</i> 7am–6pm on weekdays 8am–1pm on Saturdays</p> <p>No works on Sundays or Public Holidays or during special events protocols as advised by TMC</p> <p><i>Planned Out of Hours Works:</i> Deliveries and night-time intersection works may be required due to the Road Authority approvals.</p> <p>Haulage requirements due to oversized vehicles and the Construction requirements at or over road intersections.</p> <p><i>Out of hours works may take place without approval in an emergency to avoid the loss of lives, property and/or to prevent and/or to prevent environmental harm.</i></p> <p><i>Out of hours for work where ROL is not approved during daytime.</i></p>	<p>Earthworks (internal haul road construction only): Up to 20 movements per hour peak or 80 movements per day; these activities would occur after the morning arrival peaks and prior to the afternoon departure peaks</p> <p>In-situ Concrete Works: Up to 12 movements per hour peak or 96 movements per day; these activities would occur after the morning arrival peaks and prior to the afternoon departure peaks</p> <p>Pre-cast Segment Delivery: deliveries anticipated to be undertaken at night between 11:00 pm and 5:00 am, subject to the Road Authority Approvals, thence will be occurring prior to the morning arrival peaks and after the evening departure peaks. Vehicle movements anticipated to peak at 2 per hour or 10 per shift for 50 weeks.</p>	Oct 2014 to Nov 2016
3	Kellyville Construction Area 1	From Memorial Avenue to Samantha Riley Drive	Access/Egress: Memorial Avenue Access/Egress: Samantha Riley Drive	As per CTMSP	As per CTMSP	Nov 2014 to Nov 2016

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CTMS P #	Work site	Description	Primary Access/Egress Point	Primary Access Hours	Estimated Vehicle Movements	Indicative Construction Timeframes
4	Kellyville Construction Area 2	From Samantha Riley Drive to Windsor Road	Access/Egress: Samantha Riley Drive	As per CTMSP	As per CTMSP	Nov 2014 to Apr 2017
5	Beaumont Hills Construction Area	From Windsor Road to Sanctuary Drive	Access/Egress: Old Windsor Road Access/Egress: Sanctuary Road Access/Egress: T-Way	As per CTMSP	As per CTMSP	Mar 2015 to Apr 2017
6	Rouse Hill Construction Area 2	From Sanctuary Drive to White Hart Drive	Access/Egress: White Hart Drive Access/Egress: T-Way	As per CTMSP	As per CTMSP	Feb 2015 to Apr 2017
7	Rouse Hill Construction Area 1	From White Hart Drive to Rouse Hill Drive	Access/Egress: Tempus Street/Rouse Hill Drive Access/Egress: White Hart Drive Access/Egress: T-Way	As per CTMSP	As per CTMSP	Oct 2014 to Feb 2017
8	Windsor Road Construction Area 2	From Rouse Hill Drive to Commercial Road	Access/Egress: Windsor Road Access/Egress: Rouse Hill Drive Access/Egress: Schofields Road	As per CTMSP	As per CTMSP	Dec 2014 to Apr 2017

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CTMS P #	Work site	Description	Primary Access/Egress Point	Primary Access Hours	Estimated Vehicle Movements	Indicative Construction Timeframes
9	Windsor Road Construction Area 1	Windsor Road crossing area	Access/Egress: Windsor Road	As per CTMSP	As per CTMSP	Dec 2014 to Apr 2017
10	Second Ponds Creek Construction Area	Windsor Rd to Cudgegong Rd	Access/Egress: Schofields Road	As per CTMSP. <i>Out of hours for work where ROL is not approved during daytime.</i>	As per CTMSP	Jul 2014 to Oct 2016
11	Other – Construction access to compounds and works sites (not included above) including truck call forward locations	Access points – Vehicle Movement Plan	Access/Egress: <i>As per the EIS approvals with a Consistency Review undertaken for any departures</i>	As per CTMSP	Access/Egress for Site Management: 50 movements at the beginning and end of the shift split over two (2) areas thence equating to 25 movements at each main site compound.  Access/Egress for Site Workers: 100 movements at the beginning and end of the shift split over ten (10) areas thence equating to 10 movements at each site area.	Jul 2014 to Apr 2017

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## Surface and Viaduct Civil Works



CTMS P #	Work site	Description	Primary Access/Egress Point	Primary Access Hours	Estimated Vehicle Movements	Indicative Construction Timeframes
		Haul roads access points	Access/Egress: As per those noted in Chapter 9 of the EIS, viz: <ul style="list-style-type: none"> <li>Figure 9.15 Bella Vista Station and Balmoral Road heavy vehicle routes;</li> <li>Figure 9.16 Balmoral Road and Memorial Avenue heavy vehicle routes;</li> <li>Figure 9.17 Kellyville Station heavy vehicle routes</li> <li>Figure 9.18 Rouse Hill Station heavy vehicle routes</li> <li>Figure 9.19 Windsor Road viaduct heavy vehicle routes</li> </ul>	As per CTMSP	As per CTMSP	Jul 2014 to Apr 2017
		Access of T-Way by Construction vehicles	Access/Egress: Zone 2-7	CTMSP	CTMSP	Apr 2017
		Casting Yard	Access/Egress: Railway Rd off Groves Ave, Mulgrave	As per existing approvals	As per existing approvals	Nov 2014 to Mar 2017
11	Cable Stay Bridge	Rouse Hill Drive to Commercial Road	Access/Egress: Windsor Road	As per CTMSP  <i>Out of hours for work where ROL is not approved during daytime.</i>	As per CTMSP.	Oct 2015 to Apr 2017

# Construction Traffic Management Plan

## Surface and Viaduct Civil Works



CTMS P #	Work site	Description	Primary Access/Egress Point	Primary Access Hours	Estimated Vehicle Movements	Indicative Construction Timeframes
15-22	Segment Delivery and Lifts over public roads	Windsor Rd to Cudgegong Rd	Access/Egress: Varies	As per CTMSP. <i>Out of hours for work where ROL is not approved during daytime.</i>	As per CTMSP	Oct 2015 to Apr 2017
12-14	Balmoral Construction Area Civil Works	Balmoral Road Re-alignment, T-Way Lowering.  Signalised Intersection of Balmoral Road, Miami Street, T-Way and Old Windsor Road	Access/Egress: Varies	As per CTMSPs. <i>Out of hours for work where ROL is not approved during daytime.</i>	As per CTMSP	Oct 2015 to Jan 2017

The Construction Compound & Ancillary Facilities Management Plan details specifics on each of the access/egress points, indicative timeframe for utilisation, and indicative primary access hours. The CTMSP will be developed further as the project is developed.

The ISJV traffic management document hierarchy is outlined in Figure 1: ISJV traffic management document hierarchy. At present there is the intention to develop the construction traffic management sub-plans progressively; additional sub-plans may be required during the detailed delivery phase due to the continuous improvement of the process during the development and delivery of the project.

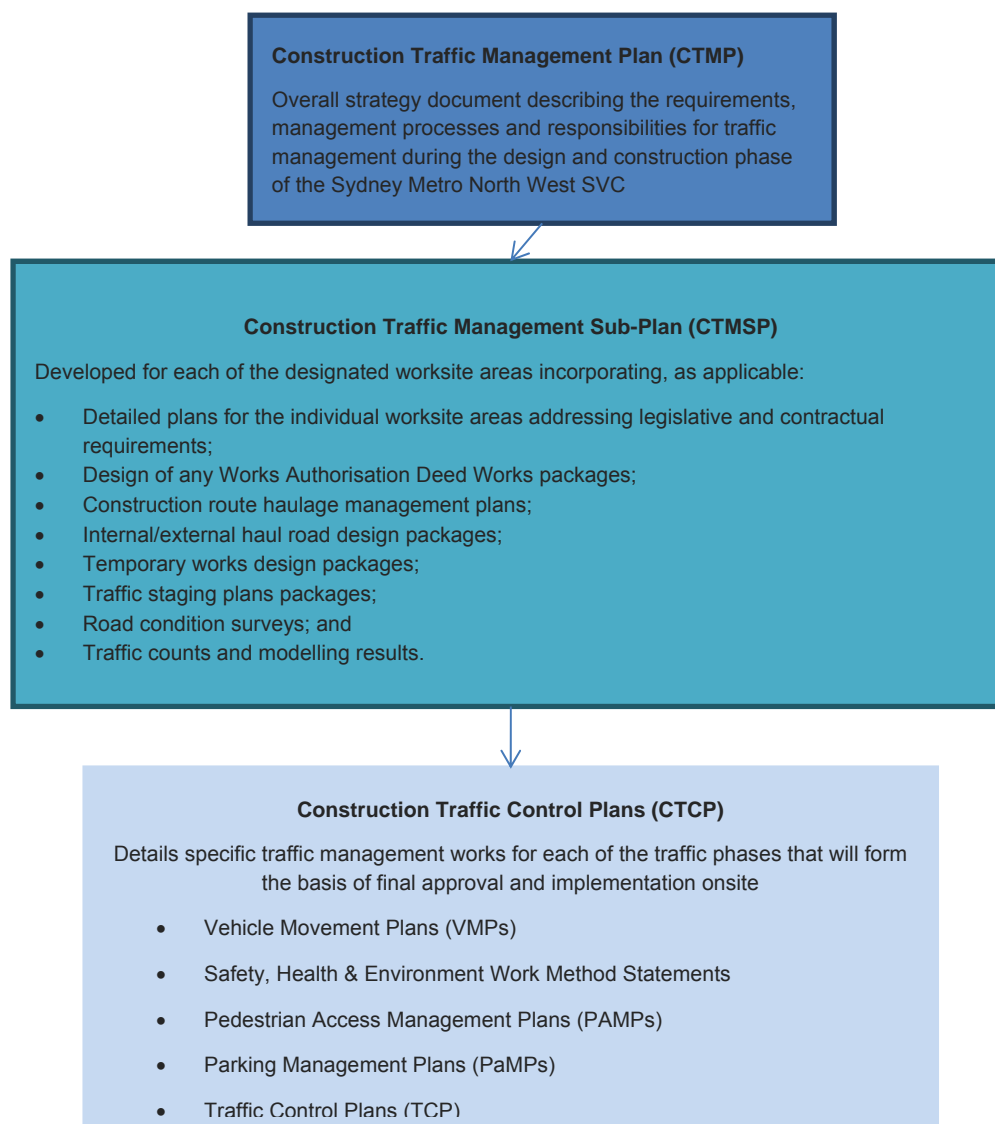


Figure 1: ISJV traffic management document hierarchy

Revisions to this CTMP and individual work site CTMSPs will be made as required as outlined in Section 7 of the CEMP and in accordance with MSP18 'Document and Data Control'.

The Traffic Manager has overall accountability for the delivery of this plan and for ensuring its contents accurately reflect current applicable codes and standards. The Environmental Manager is a designated reviewer of the plan to ensure consistency with the MCoAs and compliance with these.

# Construction Traffic Management Plan

## Surface and Viaduct Civil Works



### 1.6 Responsible Persons for the Plan

The following tabulated in Table 1.2 are the responsible persons for this plan

Table 1-2: Responsible Persons Contact List

Priority	Contact	Position	Mobile No.
1	Naomi Ingegneri	ISJV Traffic Manager	0414 789 496
2	Randall Nissen	ISJV Traffic Engineer	0498 988 295
2	Antonio Animato	ISJV Construction Manager – Superstructures	0487 887 272
3	Paolo Cesone	ISJV Construction Manager – Substructures	0428 357 929
4	Matt Sipple	ISJV Site Superintendent	0497 870 757

### 1.7 Plan Submission Process and Programme

#### 1.7.1 Interface Reviews

The proposed CTMSP, inclusive of, temporary works drawings, staging diagrams, and other applicable supporting information will be tabled at the Traffic Coordination Group (TCG), an internal interface management group discussing details of the works with TfNSW, RMS, and the other primary contractors undertaking works in the area (refer to Section 6.4 for further explanation), and the Traffic and Transport Liaison Group (TTLG) an external stakeholder interface management group discussing details of the works with TfNSW, RMS, Local Emergency Services, Transport Operators, and others (refer to 6.4 for further explanation) one-month prior to construction for discussion and feedback.

#### 1.7.2 Interface Approvals

In accordance with Section 13 of the WAD items within the road authority reserve require written notification provided to the road authority representative within 10 Business Days before construction of the relevant part of the Works commences.

ISJV will manage this interface through the submission of plans for review, comment, and approval to the relevant Road Authority representative the month prior to requesting Approval to proceed with any works. New works and review and approvals of these works are handled through the Design Management Plan and subsequent process.

SWTC Appendix 9-G10 Traffic Management have the following Hold Points and Identified Records to be created as per the below Schedules;

#### Schedule of Hold Points

- G10 Clause 3.4 Opening to traffic.

#### Schedule of Identified Records

- G10 Clause 2.2 Construction Traffic Management Plan.
- G10 Clause 2.3 Full details of the Traffic Control Plans including temporary signposting, traffic control devices and traffic control methods.
- G10 Clause 3.4 Notice that temporary roadways and detour to traffic (including portable signs or temporary traffic signals) are conforming.

These Hold and Witness Points and Identified Records shall be managed via the CTMSP Section 6 Implementation.

### 1.7.3 Anticipated Programme of Delivery of Plans

The following indicative dates are the proposed delivery of plans for distribution to the impacted stakeholders:

- CTMSP#1 at Bella Vista Construction Area (Zone 1)= March/ April 2015
- CTMSP#2 at Memorial Avenue Construction Area (Zone 2) = Aug / Sept 2014
- CTMSP#3 at Kellyville Construction Area 1 (Zone 3) = Sept/Oct 2014
- CTMSP#4 at Kellyville Construction Area 2 (Zone 4) = Sept/Oct 2014
- CTMSP#5 at Beaumont Hills Construction Area (Zone 4) = Jan/ Feb 2015
- CTMSP#6 at Rouse Hill Construction Area 2 (Zone 6) = Dec/Jan 2014-2015
- CTMSP#7 at Rouse Hill Construction Area 1 (Zone 7) = Aug/Sept 2014
- CTMSP#8 at Windsor Road Construction Area 1 (Zone 8) = Jan/Feb 2015
- CTMSP#9 at Windsor Road Construction Area 2 (Zone 9)= Jan/Feb 2015
- CTMSP#10 at Seconds Pond Creek = Jun/Jul 2014
- CTMSP#11 Cable Stay Bridge = October 2015
- CTMSP#12 = Balmoral Road Re-alignment = December 2015
- CTMSP#13 = T-Way Lowering = December 2015
- CTMSP#14 = Miami Street, Old Windsor Road and Balmoral Road = February 2015
- CTMSP#15 = Segment Lifts over Public Roads Spans 3-10 =January 2016
- CTMSP#16 = Segment Lifts over Public Roads Spans 1-2 = January 2016
- CTMSP#17 = Segment Lifts over Public Roads Span 38 = March 2016
- CTMSP#18 = Segment Lifts over Public Roads Span 85 = March 2016
- CTMSP#19 = Segment Lifts over Public Roads Span 62 = August 2016
- CTMSP#20 = Segment Lifts over Public Roads Span 97 = July 2016
- CTMSP#21 = Segment Lifts over Public Roads Spans 98-110 = February 2016
- CTMSP#22 = Segment Lifts over Public Roads Span 111 = August 2016

### 1.8 Relationship to Other Plans

The position of the traffic management plan to other plans within the ISJV Management System and overarching documentation framework is shown in Figure 2: ISJV SVC Management Systems and Document Framework.



# Construction Traffic Management Plan

Surface and Viaduct Civil Works

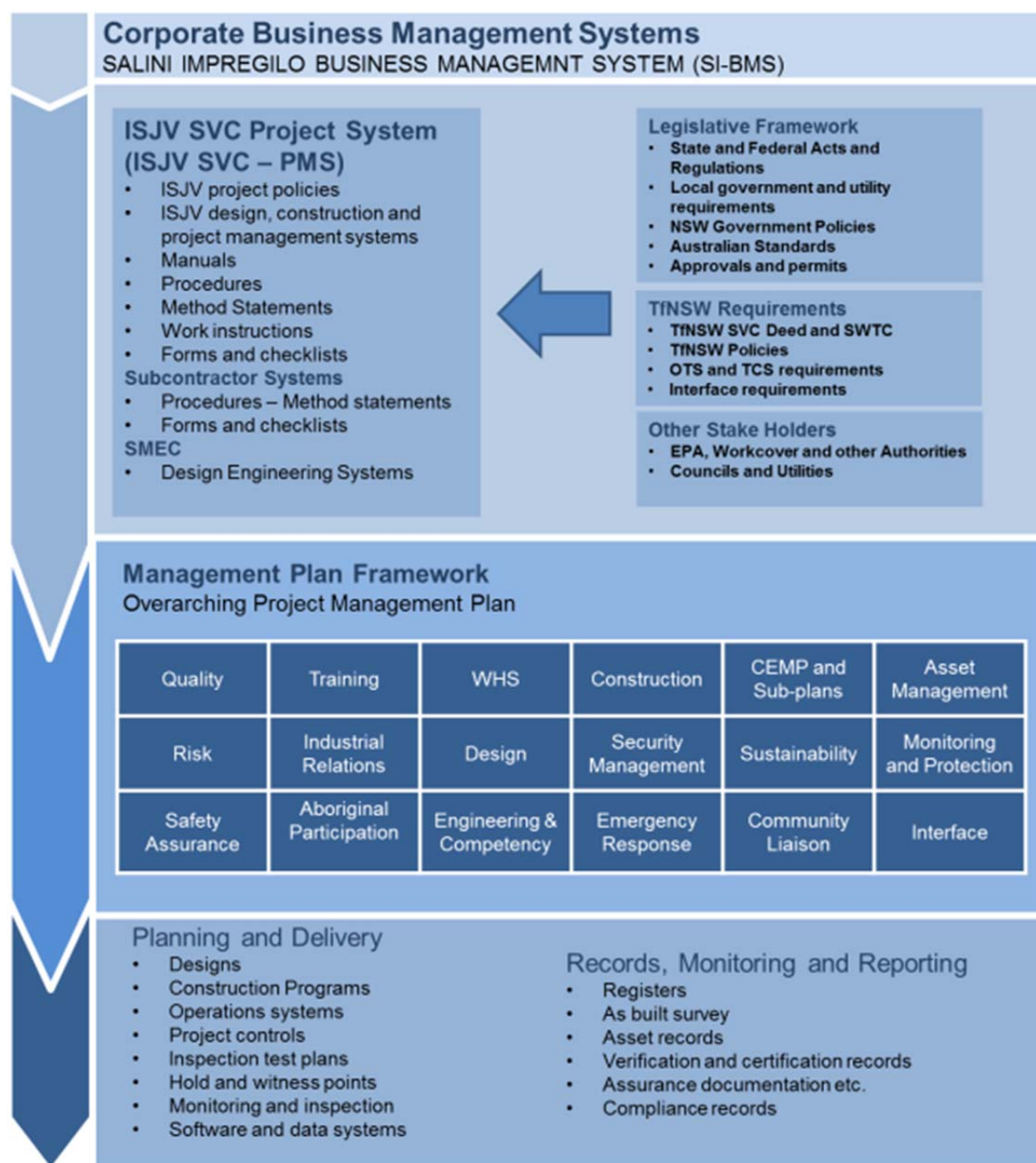


Figure 2: ISJV SVC Management Systems and Document Framework

The Construction Traffic Management Plan interfaces with all management plans. The relationship of this plan to the other plans is indicated in Figure 3.0: Hierarchy of SVC Management Plans.

# Construction Traffic Management Plan

Surface and Viaduct Civil Works



Project Management Plan			
Risk Management Plan	Design Plan	Construction Plan	Construction Environmental Management Plan
Technical Risk Management Plan	Engineering and Competency Management Plan	Waste Management and Recycling Plan	inputs to Compliance Tracking Procedure
Safety Assurance Plan	Engineering Plan	Earthworks Plan	Construction Compound Ancillary Facilities Management Plan
Assurance Documentation Management Plan	Requirements Management Plan	Spoil Management Plan	Construction Noise and Vibration Management Plan
Quality Plan	Competency Plan	Visual Amenity Management Plan	Construction Traffic Management Plan
Project Records Management Plan	Urban Design & Corridor Landscape Plan	Security Management Plan	Construction Soil and Water Management Plan
Project Purchasing Management Plan	Stormwater and Flooding Management Plan	Monitoring and Protection Plan	Soil Salinity Management Plan
Project Training Management Plan	Services Management Plan	Pollution Incident Response Management Plan	Water Quality Monitoring Program
Workplace Relations Management Plan		Site Specific Emergency Response Plan	Construction Heritage Management Plan
Project Aboriginal Participation Plan		Community Liaison Implementation Plan	Construction Flora and Fauna Management Plan
Project WHS Management Plan		Stakeholder and Community Involvement Plan	Nest Box Management Plan
Site Specific WHS Management Plan		Business Management Plan	Ecological Monitoring Program
Project WHS Development Plan	Sustainability Plan		Construction Air Quality Plan
	Carbon and Energy Management Plan		
	Asset Management Information Delivery Plan		
	Technical Maintenance Plan	Technical Data Management Plan	
	Interface Management Plan		

KEY:

Plan	Sub Plan	This Plan
TfNSW Plan	Sub - Sub Plan	

Figure 3: Hierarchy of SVC Management Plans

## 1.9 Works Authorisation Deed Design Package Interfaces

Works Authorisation Deed, Annexure G - Scope of Works 2 – Work Site Accesses incorporating the following RMS WAD Design Packages for the access/egress to the site which are subject to review as WAD packages within this CTMP:

1. WAD Package 7 – Balmoral Road: Construction access driveway from Balmoral Road

2. WAD Package 8 - Memorial Avenue: Construction access driveway from Memorial Avenue and T-Way
3. WAD Package 9 - Burns T-Way Station: Alteration to T-Way roundabout at Burns T-Way station (Memorial Avenue)
4. WAD Package 10 – Riley T-Way Station: Construction access points at Riley T-Way interchange
5. WAD Package 11 – Old Windsor Road: Construction access driveways from Windsor Road
6. WAD Package 12 – Sanctuary Drive: Construction access driveways at Sanctuary Drive and T-Way
7. WAD Package 13 – Rouse Hill Town Centre: Construction access driveways to Rouse Hill Town Centre work site
8. WAD Package 14 – Rouse Hill from Windsor Road: Modification to Windsor Road to facilitate construction access to median worksite for viaduct construction activities and SVC work area on western side of Windsor Road
9. WAD Package 15 – Schofields Road: Construction access driveway from Schofields Road

### 1.9.1 WAD Design Packaging

The design for the temporary WAD packages which are the construction traffic generating works resulting in the need for this CTMP are presented as DL85.03. For clarity, this design lot addresses the ISJV Temporary Works Design requirements of WAD packages 7, 8, 9, 10, 11, 12, 13, 14 and 15.

**Table 1-3: Design Packaging**

Design Package No	Description	Comments
DL85	Temporary Works	
85.03	Works Authorisation Deed Works for Temporary Site Access Points	Primary Design Package associated with this CTMP due to the construction generating traffic works
85.02	Haul Road	Internal Haul road Works – interfaces with Temporary Works Design package
NWRLSVC-IWP-SVCDN-DWG-850301	WAD Package General Notes	Sub-lot of the Temporary Works Design package
NWRLSVC-IWP-SVCDN-DWG-850310	WAD Package 7 - Balmoral Road Construction Access	Sub-lot of the Temporary Works Design package
NWRLSVC-IWP-SVCDN-DWG-850320	WAD Package 8 - Memorial Avenue Memorial Avenue And T-Way Construction Access	Sub-lot of the Temporary Works Design package

# Construction Traffic Management Plan

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NWRLSVC-IWP-SVCDN-DWG-850321	WAD Package 8 - Memorial Avenue Memorial Avenue And T-Way Construction Access Sign Plan	Sub-lot of the Temporary Works Design package
NWRLSVC-IWP-SVC-DN-DWG-850330	WAD Package 9 - Burns T-Way Station Alteration To T-Way Roundabout	Sub-lot of the Temporary Works Design package
NWRLSVC-IWP-SVC-DN-DWG-850340	WAD Package 10 - Riley T-Way Station Riley T-Way Interchange Construction Access	Sub-lot of the Temporary Works Design package
NWRLSVC-IWP-SVC-DN-DWG-850341	WAD Package 10 - Riley T-Way Station Riley T-Way Interchange Construction Access Sign Plan	Sub-lot of the Temporary Works Design package
NWRLSVC-IWP-SVC-DN-DWG-850350	WAD Package 11 - Old Windsor Road Old Windsor Road Construction Access	Sub-lot of the Temporary Works Design package
NWRLSVC-IWP-SVCDN-DWG-850360	WAD Package 12 - Sanctuary Drive Sanctuary Drive Construction Access	Sub-lot of the Temporary Works Design package
NWRLSVC-IWP-SVCDN-DWG-850361	WAD Package 12 - Sanctuary Drive Sanctuary Drive Construction Access Sign Plan	Sub-lot of the Temporary Works Design package

# Construction Traffic Management Plan

## Surface and Viaduct Civil Works



NWRLSVC-IWP-SVC-DN-DWG-850370	WAD Package 13 - Rouse Hill Town Centre Rouse Hill Town Centre Construction Access	Sub-lot of the Temporary Works Design package
NWRLSVC-IWP-SVC-DN-DWG-850380	WAD Package 14 - Rouse Hill From Windsor Road Windsor Road Construction Access	Sub-lot of the Temporary Works Design package
NWRLSVC-IWP-SVC-DN-DWG-850390	WAD Package 15 - Schofields Road Schofields Road Construction Access	Sub-lot of the Temporary Works Design package

## 1.10 Project Description

### 1.10.1 Description of Sydney Metro North West Project

The Sydney Metro North West project is a key priority for the NSW Government. The Sydney Metro North West will deliver a new high frequency single deck train system initially operating as a shuttle between Cudgong Road and Chatswood. The project includes eight new stations, approximately 15.5km of tunnels from Epping to Bella Vista, a 4.5km elevated 'sky train' (viaduct) between Bella Vista and Rouse Hill, and conversion of the Epping to Chatswood Rail Link to deliver high frequency rapid transit services.

Stations are planned at Cherrybrook, Castle Hill, Showground, Norwest, Bella Vista, Kellyville, Rouse Hill and Cudgong Road. Bus, pedestrian, cycling and easy access facilities will be provided at all stations, with approximately 4000 'Park and Ride' spaces spread across five sites.

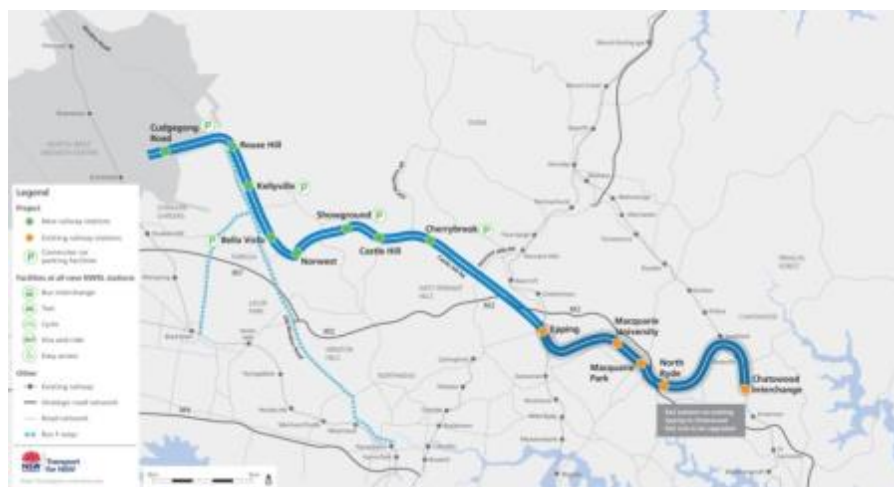


Figure 4: The North West Rail Link service proposed alignment

### 1.10.2 Description of the SVC Project Works

The scope of the SVC Project works consists of the detailed design, construction and handover of the viaducts, bridges and associated civil works required for the Sydney Metro North West between Bella Vista and Cudgegong Road and includes establishment and reinstatement of worksites, spoil removal and disposal and all required utility relocations and adjustments at construction worksites.

The permanent infrastructure to be delivered includes:

- Approximately 4.5 km of viaduct between Balmoral Road and Rouse Hill Station including crossings over Memorial Avenue, Samantha Riley Drive, Windsor Road, Sanctuary Drive and White Hart Drive
- Bulk earthworks requirements including all cut, fill and embankments between Balmoral Road and Cudgegong Road
- A bridge over Balmoral Road
- Balmoral Road realignment
- A bridge over Windsor Road / Rouse Hill
- A bridge over Second Ponds Creek
- Allowance for station structures to be incorporated onto the viaduct at the Kellyville and Rouse Hill station sites
- Adjustments to existing infrastructure and roads within the construction site and / or otherwise affected by ISJV activities
- Safe, secure personnel access / egress into site areas including necessary temporary support services and site facilities, with hoardings, fencing and so on around worksites to be left in place upon completion
- Construction traffic and transport management including temporary and permanent traffic management works
- Removal of all temporary work and site facilities not otherwise required for handover to subsequent contractors.

Activities associated with the temporary and SVC Contractor works required in order to complete construction include:

- Safe, secure personnel access / egress into site areas including necessary temporary support services and site facilities, with hoardings, fencing and the like around work sites to be left in place upon completion
- Construction traffic and transport management including temporary and permanent traffic management works
- Removal of all temporary work and site facilities not otherwise required for handover to subsequent contractors.
- Haulage from an existing pre-cast concrete and batching plant
- Construction of temporary T-way car parking at Rouse Hill and Kellyville
- Construction, removal and transportation of the gantry along the SVC construction zone
- Temporary changes to site personnel access/egress
- Signage, fencing and hoarding
- Construction environmental management activities
- Construction traffic management activities
- Interface and communications within SVC Contractor team and across Sydney Metro North West team
- Stakeholder liaison activities



- Adherence to Sydney Metro North West protocols and procedures.

### 1.10.3 Description of the Anticipated Key Vehicle Movements

The following activities are the key vehicle movements from the site:

- Access/Egress for Site Management: 50 movements at the beginning and end of the shift split over two (2) areas thence equating to 25 movements at each main site compound which are located off Samantha Riley Drive, and offsite at Mulgrave,
- Access/Egress for Site Workers: 100 movements at the beginning and end of the shift split over ten (10) areas thence equating to 10 movements at each site area, predominantly at the main site compound off Samantha Riley Drive and Mulgrave, but also at the remaining areas, viz, Zones as per Table 1.1: Schedule of Zones;
- Earthworks: Up to 20 movements per hour peak or 80 movements per day; these activities would predominately occur after the morning arrival peaks and prior to the afternoon departure peaks. These activities include: haul road construction and excavation ( near Bella Vista Station site only);
- In-situ Concrete Works: Up to 20 movements per hour peak or 160 movements per day; these activities would predominately occur after the morning arrival peaks and prior to the afternoon departure peaks
- Reinforcement: Up to 10 movements per hour or 80 movements per day; these activities would predominately occur after the morning arrival peaks and prior to the afternoon departure peaks
- Pre-cast Segment Delivery: deliveries subject to out of hours works protocols and delivery restrictions imposed by the Road Authority prior to the morning arrival peaks and after the evening departure peaks. Vehicle movements anticipated to peak at 2 per hour or 10 per shift for 75 weeks;
- Internal traffic movements within the site will be facilitated via the constructed haul roads running parallel to the viaduct within the construction corridor. Access and egress impacts external roads at access or egress driveways to the construction site.

The estimated total vehicle movements identified from the entire site on a typical day would total to approximately 250 movements (each way) per day, due to the intensive vehicular movement works occurring sequentially and not concurrently. This is an increase on the current Windsor Road traffic of < 1% based on RMS Traffic data from counter ID 71180.

### 1.10.4 Program and Construction Hours of Operation

Site establishment works will commence from July 2014, subject to environmental and contractual approvals and conditions with the project expected completion at the end of April 2017.

Construction activities will generally take place from 7am to 6pm, Monday to Friday and 8am to 1pm Saturday, with no work on Sunday, Public Holidays, or during special events likely to impact on traffic.

Haulage activities will endeavour to be undertaken outside of peak times for the network subject to OSOM permits.

However, certain activities will need to take place during evening, night time periods, Sundays and Public Holidays (subject to and only on meeting the relevant MCoAs and/or relevant approvals) due to:

- Technical considerations (e.g. the need to meet quality specifications for placement of concrete piers within a continuous pour)

# Construction Traffic Management Plan

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## Surface and Viaduct Civil Works



- Pre-cast member erection over existing road intersections (e.g. Windsor Road Crossing, Sanctuary Road Crossing, White Hart Drive Crossing, Windsor Road Crossing No 2, Memorial Avenue Crossing, and others)
- Safety reasons, and/or
- To minimise disturbance cause to existing road traffic flows.

Out of hours works may take place without approval in the following circumstances:

- The works do not cause construction noise to be audible at any sensitive receiver
- For the delivery of materials required by the Police or other authorities for safety reasons, or
- In an emergency to avoid the loss of lives, property and/or to prevent environmental harm.

Construction works will begin with the establishment of the primary construction compound near Samantha Riley Drive before construction of the haul road and site access points.



## 2 PURPOSE AND OBJECTIVES

### 2.1 Purpose

This CTMP outlines ISJV actions, procedures and processes during the Sydney Metro North West SVC works.

ISJV will construct the Project Works and construct and remove the Temporary Works with the least possible obstruction to pedestrians, cyclist, public transport services and road traffic.

It does not cover any traffic management actions, processes or procedures that would apply after the Sydney Metro North West SVC is completed or during the Operations and Maintenance stage. All traffic management works during the Sydney Metro North West SVC works will be managed and controlled by the ISJV Traffic Management team outlined in Section 6: Compliance Management.

### 2.2 Objectives

The primary objective of traffic management during the construction works is to maximise safety of people at work sites by ensuring that traffic control at each work site consistently complies with best practice and to provide a safe road network for all road users, including ISJV's construction workforce. The key objectives are to:

- Minimise disruptions to pedestrians, cyclists, buses and motorists
- Minimise heavy vehicle movements during peak traffic periods
- Minimise access disruptions to adjoining properties
- Encourage sustainable transport options by site workers.

### 2.3 Performance Indicators

During the SVC Design and Construction works, ISJV will undertake traffic surveillance to monitor the effectiveness of each work site CTCP. Performance indicators have been established to measure the effectiveness of the implemented CTCPs. Surveillance will be undertaken on all roads open to the public within the site and any other parts of the road network affected by the works, in line with the performance indicators outlined in Table 2-1: Performance Indicators.

Table 2-1: Performance Indicators

Performance Indicator	Description	Monitoring	Reporting
Monitoring of traffic control devices	Integrity of devices including cleanliness, performance output in daytime and night time, degradation, safety, placement attachment/connection	Twice daily	Weekly
Compliance checks	Completion/ documentation of checks as described in Procedure ISJV-SVC-PMS- MSF22L-1 Traffic Risk Management Form	Daily	Traffic and Transport Liaison Group (TTLG)
Quality audits	Quality Audits to ensure compliance with the requirements	As required in the Quality Management Plan	As required in the Quality Management Plan

# Construction Traffic Management Plan

## Surface and Viaduct Civil Works



Accidents	Monitoring and recording of public incidents within our project boundaries or sites under our control in accordance with MSP42 Incidents Management V1R1 Procedure and ISJV-SVC and the ISJV –SVC- SSERP	These are monitored by the Site Supervisors, Traffic Control Supervisors, and other ISJV workers.	Logged in the register of all incidents/accidents/complaints maintained by the Traffic Manager and reported to the TTLG if requested.
Delays	Monitoring of end of queue	After every major traffic change, then every 3 months or more frequently if noted as required by the TMC and in conjunction with the TTLG	TTLG
Environmental	To respond to community and/or stakeholder environmental complaints on traffic-related issues within two hours of notification and reply in writing within seven days	Daily	Monthly
Community	To respond to community and/or stakeholder complaints on traffic-related issues within two hours of notification and reply in writing within seven days	Daily, and/or as required under the CLIP	Monthly
Transport management Centre (TMC)	To have no breaches of ROL conditions	Daily	Monthly

### 3 REQUIREMENTS FRAMEWORK

#### 3.1 Relevant Legislation and Guidelines

##### 3.1.1 Legislation and Regulatory Requirements

Legislation relevant to traffic management includes the Environmental Planning and Assessment Act 1979 (EP&A Act), under which the Project Approval was granted. Relevant provisions of the EP&A Act are explained in the register of environmental legislation included in Appendix 6 of the CEMP.

Identified regulatory requirements relevant to traffic management include:

- Ministers Conditions of Approval (MCoAs)
- Revised Environmental Mitigation Measures
- Australian Road Rules
- Roads Act 1993
- Transport Administration Act 1988
- Road Transport Act 2013 Approved and valid Road Occupancy Licenses (ROL)
- Approved and valid Road Occupancy Permits (ROP) and
- An approved relevant Speed Zone Authorisation (SZA)

##### 3.1.2 Guidelines

The main guidelines, specifications and policy documents relevant to this CTMP and that must be considered in preparation of each specific work site CTMSP and associated CTCs include:

- TfNSW QA Specification D&C G10 – Traffic Management (G10 specifications)
- Roads and Maritime Services (RMS) Traffic Control at Worksites Manual (2010) (TCWSM)
- AS 1742.3 Manual of uniform traffic control devices Part 3: Traffic control for works on roads
- Austroads AGTM02/08 Guide to Traffic Management - Part 2 Traffic Theory
- Transport Management Centre Road Occupancy Manual (2012) (ROM)
- TfNSW TDT 2010/07 Use of Variable Message Signs
- Austroads Road Safety Audit Second Edition 2002: Checklist 4. Pre-opening scheme audit
- Austroads Road Safety Audit Second Edition 2002: Checklist 5: Roadwork traffic scheme audit
- Austroads Road Safety Audit Second Edition 2002: Checklist 6: Existing roads: road safety audit
- RMS Road Design Guide
- RMS NSW Bicycle Guidelines
- TfNSW Bicycle Guidelines
- Austroads Guide to Traffic Engineering Practice – Part 13 Pedestrians
- Austroads Guide to Traffic Engineering Practice – Part 14 Bicycles
- Austroads Guide to Road Design Part 3 – Geometric Design
- Austroads Guide to Road Design Part 4B – Roundabouts (2009)
- Guide: Signposting (RTA, July 2007) and
- Tourist Signposting guide (RMS and Destination NSW, 2012)
- RTA – NSW Speed Zoning Guidelines (2004)
- RTA – Delineation Guidelines (2008)
- RTA – Guidelines for Road Safety Audit Practices
- RTA – Road Occupancy Manual
- RTA Traffic Signal Design Manual

- T-Way Access Protocol
- Code of Practice – How to manage work health and safety risks 2011.
- Code of Practice – Consultation, Cooperation & Coordination 2011.
- Code of Practice – Excavation Work 2012.
- Code of Practice – Construction Work 2012.
- Code of Practice – Traffic Management in workplaces 2013.
- T002 - Working on foot within close proximity to moving traffic.
- T020 – Work near traffic

### 3.1.3 Contractual Documents

SVC Project Deed Contract Number 00013/10400, of particular relevance are:

- Scope of Works and Technical Criteria (SWTC)
- Interface Agreement – surface and viaduct civil works between TfNSW and The Hills Shire Council;
- Interface Agreement - Rail Safety Interface Agreement - Roads and Maritime Services;
- Interface Agreement - Rail Safety Interface Agreement - The Hills Shire Council
- Works Authorization Deed – Northwest Rail Link – Surface and Viaduct Civil (SVC) works between RMS and TfNSW.
- Exhibit A SWTC Appendix 9 – Principles General Specification G10 – Traffic and Transport Management

### 3.1.4 Other Legislative Requirements

- Workplace Health & Safety Act 2011.
- Workplace Health & Safety Regulations 2011.

### 3.1.5 ISJV Documents

- MSP22L Traffic Risk Management V1R1
- Forms, Registers & Work Instructions
  - MSF22L-1 Traffic Risk Management Form
  - MSF22L-2 Daily Traffic Control Inspection Checklist
  - MSF22L-3 Traffic Management Audit Checklist
  - MSR22L-1 TCPs & VPMPs Schedule.
- Associated Documentation
  - MSP17 Consultation
  - MSP22 Risk Management
  - MSP41 Monitoring & Measurement
  - MSP43 SHE Inspections
  - MSP50 Control of Records & Archiving
  - MSP51 Auditing

# Construction Traffic Management Plan

## Surface and Viaduct Civil Works



### 3.2 Minister's Conditions of Approval

#### 3.2.1 Major Civil Construction Works - North West Rail Link (SSI-5100)

Table 3-1: Conditions of Approval (SSI-5100) relevant to the CTMP

No	Ref.	Relevant Requirement	Reference
1.	C27.	<p>The SSI shall be designed and constructed with the objective of minimising adverse changes to the efficiency, accessibility and safety of the road and associated transports networks, and where feasible and reasonable, facilitate an improved level of service, in relation to permanent changes. Detailed design and assessment of related traffic and accessibility impacts and changes shall be undertaken:</p> <ul style="list-style-type: none"> <li>a) in consultation with, and to the reasonable requirements of, the relevant road authority and transport operator;</li> <li>b) in consideration of existing and future demand (in relation to permanent changes), performance and safety requirements; and</li> <li>c) to meet relevant design, engineering &amp; safety guidelines, including Austroads, Australian Standards, RMS (RTA) requirements and the like.</li> </ul> <p>Changes shall be certified by an appropriately qualified person(s) and certified copies of civil, structural and traffic signal design plans shall be submitted to the relevant road authority for consideration and acceptance prior to the commencement of the relevant works.</p>	Design Plan This CTMP and CTMSPs
2.	C28.	A Traffic and Transport Liaison Group shall be established by the Proponent to inform the detail design of temporary and permanent traffic and transport measures and to inform ongoing management measures prior to and during construction of the SSI. The Group shall be chaired by the Proponent and shall comprise representatives from relevant road authorities (including the RMS and councils), transport operators, and emergency services. The Group shall be consulted on and shall inform the preparation of the Construction Traffic Management Plan (condition E46(c)) and associated plans.	Section 6.4.5
3.	C29.	The Proponent shall undertake supplementary analyses as required by the Traffic and Transport Liaison Group and, where relevant, detailed modelling of traffic changes and impacts that have the potential to have a significant impact on traffic flow efficiency with the objective of informing and improving traffic management measures. The requirement for, and details of, the modelling shall be undertaken in consultation with the Traffic and Transport Liaison Group. The revised traffic management measures, including changes to the pedestrian, bicycle and public transport networks, shall be incorporated into the Construction Traffic Management Plan (condition E46(c)).	Section 6.4.5, 5.3, 6.2
4.	C30.	Without limiting the outcomes of the Construction Traffic Management Plan for the SSI, construction traffic shall be scheduled, where feasible and reasonable, to outside of AM and PM peak traffic periods, and also during special events. Methods used to limit construction traffic outside of peak traffic periods shall be incorporated into the Construction Traffic Management Plan (condition E46(c)).	Section 4.11, 5.2

# Construction Traffic Management Plan

## Surface and Viaduct Civil Works



No	Ref.	Relevant Requirement	Reference
5.	C31.	Bridgeworks and other structures in the proximity of the road and associated transport networks shall be designed to ensure the efficient and safe operation of the networks.	Design Plan
6.	C32.	Permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclists, and public transport users will be subject to safety audits demonstrating consistency with relevant design, engineering and safety standards and guidelines. Safety audits shall be submitted to the Traffic and Transport Liaison Group prior to the use of the subject infrastructure and shall be made available to the Director General upon request.	Design Plan <b>Table 5-2</b>
7.	E35.	Where construction will physically affect or likely impact the efficiency and safety of road and related transport networks (including traffic flow, access, parking and user safety), the Proponent shall develop, assess, and implement appropriate management measures in consultation with the relevant road authority, transport operator(s), and emergency services, as relevant. Such measures shall be addressed in the Construction Traffic Management Plan (condition E46(c)) and shall include but not be limited to: <ul style="list-style-type: none"> <li>a) construction site access, including the efficient and safe egress and ingress of vehicles;</li> <li>b) parking management, including on and off street and remote parking and access;</li> <li>c) haulage management, including works to facilitate haulage vehicles, the restriction of haulage vehicles on certain routes (for example T-Ways and past education facilities) and the minimisation of haulage in peak traffic periods;</li> <li>d) full and partial road closures and associated restrictions, detours and the like;</li> <li>e) the retention and reinstatement of emergency and property access;</li> <li>f) the retention of user and passenger safety, including pedestrians, cyclists, public transport users, including at stops and related facilities; and</li> <li>g) incident response planning.</li> </ul>	<b>Table 5-3</b>
8.	E36.	Access to private property shall be maintained during construction unless otherwise agreed with the property owner in advance. A landowner's access that is physically affected by the SSI shall be reinstated to at least an equivalent standard, in consultation with the property owner.	<b>Table 5-3</b> Section 4.12
9.	E37.	Impacts to existing parking (on and off street) should be minimised, including the amount of spaces reduced and the time associated with this reduction. Where parking is impacted, particularly for periods greater than four weeks, the proponent shall identify and implement, where feasible and reasonable, alternate parking arrangements. Displaced vehicles must not be accommodated on the state road network.	Section 4.19 <b>Table 5-3</b>

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No	Ref.	Relevant Requirement	Reference
10.	E38.	<p>Upon determining the haulage route(s) for construction vehicles associated with the SSI, and prior to use of the haulage route(s) by heavy vehicles, an independent and qualified person or team shall undertake a Road Dilapidation Report on local roads from the construction access/ egress point(s) to the arterial road network. The report shall assess the current condition of the road and describe mechanisms to restore any damage that may result due to traffic and transport related to the construction of the SSI, during construction. The Report shall be submitted to the relevant road authority for review prior to use of the haulage routes(s).</p> <p>Following completion of construction, a subsequent report shall be prepared to assess any damage that may have resulted from the construction of the SSI.</p> <p>Measures undertaken to restore or reinstate roads affected by the SSI shall be undertaken in a timely manner, in accordance with the reasonable requirements of the relevant road authority, and at the full expense of the Proponent.</p>	Section 4.17
11.	E39.	Safe pedestrian and cyclist access through or around worksites shall be maintained during construction. In circumstances where pedestrian and cyclist access is restricted due to construction activities, a feasible and reasonable alternate route shall be provided and signposted.	Section 5.2 <b>Table 5-2</b>
12.	E40.	<p>Construction vehicles (including staff vehicles) associated with the SSI shall be managed to:</p> <ul style="list-style-type: none"> <li>a) minimise parking or queuing on public roads;</li> <li>b) minimise the use of local roads (through residential streets and town centres) to gain access to construction sites and compounds;</li> <li>c) minimise traffic past schools and child care centres, particularly during opening and closing periods; and</li> <li>d) adhere to the nominated haulage routes identified in the Construction Traffic Management Plan (condition E46c)).</li> </ul>	Section 4.11
13.	E46. (c)	(c) A Construction Traffic Management Plan to manage construction traffic and transport access impacts of the SSI. The plan shall be developed in consultation with and meet the reasonable requirements of the relevant road authority, and/or transport operator, and shall include but not be necessarily limited to:	This CTMP and CTMSP
		<p>(i) a traffic route and haulage management plan that identifies:</p> <ul style="list-style-type: none"> <li>a) traffic generation from other major infrastructure developments;</li> <li>b) construction traffic and haulage routes and associated traffic impacts,</li> <li>c) types and volumes of construction vehicles and associated route and time restrictions, including details of oversized load movements,</li> <li>d) potential traffic disruptions and temporary and permanent detours,</li> <li>e) management, mitigation and restoration measures;</li> </ul>	Section 4.11

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No	Ref.	Relevant Requirement	Reference
		(ii) a parking management plan that identifies: <ul style="list-style-type: none"> <li>a) parking requirements and on and offsite parking arrangements and associated impacts,</li> <li>b) remote parking arrangements and associated access between sites and public transport nodes,</li> <li>c) alternate parking arrangements for displaced parking,</li> <li>d) communication and parking management measures;</li> </ul>	Section 4.19
		(iii) site traffic and access management plans that detail: <ul style="list-style-type: none"> <li>a) site access and associated route and turning movements and the design and signalisation of intersections,</li> <li>b) potential activities that could result in the disruption to traffic and transport networks, including pedestrian, cyclist and public transport networks and during special events,</li> <li>c) the timing of works to limit disruptions to the road and transport networks,</li> <li>d) the maintenance of access to and safety of transport networks, parking and property,</li> <li>e) service facilities and station sites, and other locations identified by the relevant road authority or transport operator,</li> </ul>	CTMSP
		(iv) incident response plan detailing responses to management of an event that directly involves or impacts on traffic and transport networks;	Section 55.4 Site Specific Emergency Response Plan
		(v) mechanisms for the monitoring, review and amendment of this plan.	Section 7.2



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### 3.2.2 Stations, Rail Infrastructure and Systems - North West Rail Link (SSI-5414)

Table 3-2: Conditions of Approval (SSI-5414) relevant to the CTMP

No.	Ref.	Relevant Requirement	Reference
14.	C2	<p>The SSI shall be designed and constructed with the objective of integrating with the existing and proposed road and related transport networks and minimising adverse changes to the efficiency, accessibility and safety of the networks, and where feasible and reasonable, facilitate an improved level of service, in relation to permanent and operational changes. Detailed design and assessment of related traffic, parking, pedestrian and cycle accessibility impacts and changes shall be undertaken:</p> <ul style="list-style-type: none"> <li>a) in consultation with, and to the reasonable requirements of the Traffic and Transport Liaison Group;</li> <li>b) in consideration of existing and future demand, connectivity (in relation to permanent changes), performance and safety requirements;</li> <li>c) to minimise and manage regional and local area traffic impacts;</li> <li>d) to ensure access is maintained to property and infrastructure; and</li> <li>e) to meet relevant design, engineering and safety guidelines, including Austroads, Australian Standards, and RMS (RTA) requirements.</li> </ul> <p>Changes shall be certified by an appropriately qualified person(s) and certified copies of civil, structural and traffic signal design plans shall be submitted to the relevant road authority for consideration and acceptance prior to the commencement of the relevant works.</p>	Design Plan This CTMP CTMSP
15.	C3	Bridgeworks (under and over) and other structures in the proximity of the road and associated transport networks shall be designed to ensure the efficient and safe operation of the networks.	Design Plan
16.	C4	<p>Permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclists, and public transport users will be subject to safety audits demonstrating consistency with relevant design, engineering and safety standards &amp; guidelines.</p> <p>Safety audits shall be submitted to the Traffic and Transport Liaison Group (condition C8) prior to the completion and use of the subject infrastructure and shall be made available to the Director General upon request.</p>	Design Plan  Section 6.6
17.	C8	A Traffic and Transport Liaison Group shall be established to inform the detail design of temporary construction and permanent operational traffic and transport measures and to inform ongoing management measures prior to and during construction of the SSI. The Group shall be chaired by the Proponent and shall comprise representatives from the Department (Land Release) relevant road authorities (including the RMS and Councils), transport operators (including bus and taxi operators), and emergency services as required. The Group shall be consulted on and shall inform the preparation of the Construction Traffic Management Plan (condition E34) and Station Access Plan(s) (condition C5).	Section 6.4.5

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No.	Ref.	Relevant Requirement	Reference
18.	C9	<p>The Proponent shall undertake supplementary analyses as required by the Traffic and Transport Liaison Group and, where relevant, detailed modelling of traffic changes and impacts that have the potential to have a significant detrimental impact on traffic flow efficiency with the objective of informing and improving road network changes and traffic management measures. The requirement for and details of the modelling shall be undertaken in consultation with the Traffic and Transport Liaison Group.</p> <p>The revised traffic management measures, including changes to the pedestrian, bicycle and public transport networks, shall be incorporated into the Construction Traffic Management Plan (condition E34(c)) and Station Access Plan(s) (condition C5), where applicable.</p>	Section 5.3, 6.2, 6.4.5
19.	E1	<p>Where construction will impact the efficiency and safety of road and related transport networks (including traffic flow, access, bus routes, parking and user safety), the Proponent shall develop, assess, and implement appropriate management measures in consultation with the relevant road authority, transport operator(s), and emergency services, and adjoining major land holders, as relevant. Such measures shall be addressed in the Construction Traffic Management Plan (E34(c)) and shall include but not be limited to:</p> <ul style="list-style-type: none"> <li>(a) construction site access, including the efficient and safe egress and ingress of vehicles, consistent relevant Austroads, Australian Standards and RMS requirements;</li> <li>(b) parking management, including on and off street and remote parking and access;</li> <li>(c) heavy vehicle management, the restriction (unless otherwise approved) of heavy vehicles on certain routes (for example T-Ways and past education facilities) and the minimisation of heavy vehicle traffic in peak traffic periods;</li> <li>(d) bus rerouting and access to bus stops;</li> <li>(e) full and partial road closures and associated restrictions, detours and the like;</li> <li>(f) special event management;</li> <li>(g) the retention and reinstatement of emergency and property access;</li> <li>(h) the retention of user and passenger safety, including pedestrians, cyclists, public transport users, including at stops and related facilities;</li> <li>(i) incident response planning.</li> </ul>	<p>This CTMP CTMSPs <b>Table 5-3</b></p>
20.	E2	<p>Access to property shall be maintained during construction unless otherwise agreed with the property owner in advance. A landowner's access that is physically affected by the SSI shall be reinstated to at least an equivalent standard, in consultation with the property owner.</p>	<p><b>Table 5-3</b> 4.12</p>

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No.	Ref.	Relevant Requirement	Reference
21.	E3	Impacts to existing parking (on and off street) should be minimised, including the amount of spaces reduced and the time associated with this reduction. Where parking is impacted, particularly for periods greater than four weeks, the proponent shall identify and implement, where feasible and reasonable, alternate parking arrangements. Displaced vehicles must not be accommodated on the state road network.	<b>Table 5-3</b>
22.	E4	Without limiting the outcomes of the Construction Traffic Management Plan for the SSI, construction traffic shall be scheduled, where feasible and reasonable, to outside of AM and PM peak hours, and also during special events. Methods used to limit construction traffic outside of peak traffic periods shall be incorporated into the Construction Traffic Management Plan (E34(c)).	Section 4.11, 5.2
23.	E5	<p>Upon determining heavy vehicle routes associated with the SSI, and prior to use of these route(s) by heavy vehicles, an independent and qualified person or team shall undertake a Road Dilapidation Report on local roads from the construction access/ egress point(s) to the arterial road network. The report shall assess the current condition of the road and describe mechanisms to restore any damage that may result due to traffic and transport related to the construction of the SSI, during construction. The Report shall be submitted to the relevant road authority for review prior to use of the haulage routes(s).</p> <p>Following completion of construction, a subsequent report shall be prepared to assess any damage that may have resulted from the construction of the SSI.</p> <p>Measures undertaken to restore or reinstate roads affected by the SSI shall be undertaken in a timely manner, in accordance with the reasonable requirements of the relevant road authority, and at the full expense of the Proponent.</p>	Section 4.17
24.	E6	Safe pedestrian and cyclist access through or around worksites shall be maintained during construction. In circumstances where pedestrian and cyclist access is restricted due to construction activities, a feasible and reasonable alternate route shall be provided and signposted.	Section 5.2 <b>Table 5-2</b>
25.	E7	<p>Construction vehicles (including staff vehicles) associated with the SSI shall be managed to:</p> <ul style="list-style-type: none"> <li>(a) minimise parking or queuing on public roads and non-associated sites;</li> <li>(b) minimise the use of local roads (through residential streets and town centres) to gain access to construction sites and compounds;</li> <li>(c) minimise traffic past schools and child care centres, particularly during opening and closing periods; and</li> <li>(d) adhere to the nominated heavy vehicle routes identified in the Construction Traffic Management Plan (E34(c)).</li> </ul>	Section 4.11

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No.	Ref.	Relevant Requirement	Reference
26.	E34 (c)	(c) A Construction Traffic Management Plan to manage construction traffic and transport access impacts of the SSI. The plan shall be developed in consultation with and meet the reasonable requirements of the relevant road authority and transport operator(s), and shall include but not be necessarily limited to:	This CTMP
		(i) a traffic route management plan that identifies: <ul style="list-style-type: none"> <li>i. traffic generation from other major infrastructure developments;</li> <li>ii. construction traffic and heavy routes and associated traffic impacts,</li> <li>iii. types and volumes of construction vehicles and associated route and time restrictions, including details of oversized load movements,</li> <li>iv. potential traffic disruptions and temporary and permanent detours,</li> <li>v. traffic noise impacts, sensitive receivers and times of the day;</li> <li>vi. management, mitigation and restoration measures;</li> </ul>	Section 4.11, 5
		(ii) a parking management plan that identifies: <ul style="list-style-type: none"> <li>i. parking requirements and on and offsite parking arrangements and associated impacts,</li> <li>ii. remote parking arrangements and associated access between sites and public transport nodes,</li> <li>iii. alternate parking arrangements for displaced parking,</li> <li>iv. communication and parking management measures;</li> </ul>	Section 4.19
		(iii) site traffic and access management plans that detail: <ul style="list-style-type: none"> <li>i. site access and associated route and turning movements and the design and signalisation of intersections,</li> <li>ii. potential activities that could result in the disruption to traffic and transport networks, including pedestrian, cyclist and public transport networks and during special events,</li> <li>iii. the timing of works to limit disruptions to the road and transport networks,</li> <li>iv. the maintenance of access to and safety of transport networks, parking and property,</li> <li>v. service facilities and station sites, and other locations identified by the relevant road authority or transport operator,</li> </ul>	CTMSP

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No.	Ref.	Relevant Requirement	Reference
		(iv) an incident response plan detailing responses to the management of an event that directly involves or impacts on traffic and transport networks; and	Section 5.4 Site Specific Emergency Response Plan
		(v) mechanisms for the monitoring, review and amendment of this plan.	Section 7.2

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## 3.3 Revised Environmental Mitigation Measures (REMM)

### 3.3.1 Stage 1 Submissions Report (SSI-5100)

Table 3-3: Revised Environmental Mitigation Measures (SSI-5100) relevant to the CTMP

No.	Original Ref.	Relevant Requirement	Reference
27.	T1	Directional signage and line-marking would be used to direct and guide drivers and pedestrians past construction sites and on the surrounding network. This would be supplemented by permanent and portable Variable Message Signs, where reasonable and feasible, to advise drivers of any potential delays, traffic diversions, speed restrictions, or alternative routes.	CTMPs
28.	T2	The public would be notified of proposed traffic changes by newspaper, radio, project web site and other forms of community liaison.	Section 6.4 Community Liaison Implementation Plan
29.	T3	Co-ordination would occur with Roads and Maritime Services (RMS) via the Transport Management Centre's Traffic Operations Manager in the event of incidents or undue congestion.	Section 5.4, 6.4.1 Individual work site CTMPs
30.	T4	Management of pedestrian and vehicular access to and past construction sites would occur to ensure safe entry and exit procedures. Depending on the location, this may require manual supervision, physical barriers, temporary traffic signals (local roads, subject to Traffic Committee consideration and/or internal haul routes) and modification to existing signals (arterial roads requiring diversions or new intersections, subject to design approvals, RMS and Traffic Committee consideration) or, on occasions, police presence.	Section 5.2, 5.3 <b>Table 5-2</b>  Individual work site CTMPs
31.	T5	Access to existing properties and buildings would be maintained.	Section 4.12 <b>Table 5-3</b>

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No.	Original Ref.	Relevant Requirement	Reference
32.	T6	Traffic controllers would manage heavy vehicle movements at worksites, and monitor the need for pedestrian control.	<b>Table 5-2</b> CTMPs
33.	T7	All trucks would enter and exit the worksites in a forward direction, where feasible and reasonable.	Section 4.11
34.	T8	The management of buses at key transport interchanges, such as Castle Hill and Rouse Hill, would be reviewed during the detailed construction planning to minimise impacts on existing services.	Section 4.20 CTMPs Section 6.4.5
35.	T9	The T-Way operations, including car parking, would be maintained at all times during the construction of the NWRL. This includes maintained existing sight lines to T-Way bus stops and within T-Way car parks, where possible. Where this is not possible, suitable alternative measures would be implemented (e.g. CCTV with active surveillance) where reasonable and feasible.	Section 5.2 CTMPs
36.	T10	The need for, and provision of, alternative remote parking locations and shuttle bus transfers for daytime and night time construction staff would be considered for all construction sites during detailed construction planning.	Section 5.2 CTMPs
37.	T11	Special event bus services for Sydney Olympic Park (Royal Easter Show, and Major Sporting and Entertainment Events) would be managed, in particular, in Carrington Road at the Hills Centre Station site, to ensure minimal disruption.	N/A
38.	T12	The Traffic and Transport Liaison Group established for the NWRL would consider individual events and any other special event needs and, make reasonable and feasible short-term adjustment to the construction phase activities and / or review and update detailed Traffic Management Plans.	Section 5.6
39.	T13	Site traffic would be managed, where reasonable and feasible, to avoid significant movements in the AM peak in the critical southbound direction and in the PM peak in the critical northbound direction on Beecroft Road at Epping.	N/A
40.	T15	Access would be maintained to sections of the pedestrian bush track at Cheltenham which would not be affected by construction works. Additionally, the provision of an alternative track would be considered during construction planning.	N/A

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No.	Original Ref.	Relevant Requirement	Reference
41.	T16	Access to the Bella Vista Station site during the daytime would be at a location off Celebration Drive to the east of the Lexington Avenue intersection to minimise traffic impacts at the Celebration Drive / Lexington Avenue intersection. The Celebration Drive / Lexington Avenue intersection would be used as an access during the night and at low traffic times.	N/A
42.	T17	If construction of NWRL occurs before the Schofields Road upgrade, interim upgrading of the road would be undertaken (unless otherwise agreed with Roads and Maritime Services) with improved pavement quality and wider sealed shoulders to accommodate heavy vehicle usage.	N/A
43.	T18	A dilapidation report would be prepared prior to construction for all affected local roads from the construction access / egress point to the arterial road.	Section 4.17
44.	T19	An alternative pedestrian route via Ray Road and Kandy Avenue would be appropriately signposted for pedestrian movements between Epping Town Centre and the Beecroft Road M2 Motorway overbridge.	N/A
45.	T20	Truck movements on Ray Road would be restricted during the AM and PM peak periods. During these times, truck access and egress to and from the site would be via Beecroft Road only.	N/A
46.	T21	Staff working at the Epping Services Facility would be discouraged from parking on local roads and encouraged to: <ul style="list-style-type: none"> <li>• Use public transport.</li> <li>• Car share.</li> <li>• Park in a designated off-site area and access the site via shuttle bus.</li> </ul>	N/A
47.	T22	Where schools occur in the immediate vicinity of the construction sites, heavy vehicle movements would be minimised (where reasonable and feasible), between 8:00-9:30 am and 2:30-4:00 pm Monday to Friday (on school days).	Section 4.11.1
48.	T23	Access and egress on and off Norwest Boulevard would be outside of peak periods only.	N/A



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### 3.3.2 Stage 2 Submissions Report (SSI-5414)

Table 3-4: Revised Environmental Mitigation Measures (SSI-5414) relevant to the CTMP

No.	Original Ref.	Relevant Requirement	Reference
49.	T1	Directional signage and line-marking would be used to direct and guide drivers, cyclists and pedestrians past construction sites and on the surrounding network. This would be supplemented by permanent and portable Variable Message Signs, where reasonable and feasible, to advise drivers of any potential delays, traffic diversions, speed restrictions, or alternative routes.	CTMPs
50.	T2	The public would be notified of proposed traffic changes by newspaper, radio, project web site and other forms of community liaison.	Section 6.4 Community Liaison Implementation Plan
51.	T3	Co-ordination would occur with TfNSW and RMS via the Transport Management Centre's Traffic Operations Manager in the event of incidents or undue congestion.	Section 5.4, 6.4.1
52.	T4	Management of pedestrian, cyclist and vehicular access to and past construction sites would occur to ensure safe entry and exit procedures. Depending on the location, this may require manual supervision, physical barriers, temporary traffic signals and modification to existing signals or, on occasions, police presence.	Section 5.2, 5.3 <b>Table 5-2</b>  CTMPs
53.	T5	Access to existing properties and buildings would be maintained.	<b>Table 5-3</b> Section 4.12 Individual work site CTMPs
54.	T6	Traffic controllers would manage heavy vehicle movements at worksites, and monitor the need for pedestrian control.	<b>Table 5-2</b> CTMPs

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No.	Original Ref.	Relevant Requirement	Reference
55.	T7	All trucks would enter and exit the worksites in a forward direction, where feasible and reasonable.	Section 4.11 CTMPs
56.	T8	The management of buses at key transport interchanges such as Castle Hill and Rouse Hill would be reviewed during detailed construction planning to minimise impacts on existing services.	Section 4.20 CTMPs
57.	T9	The T-Way operations including car parking would be maintained at all times during the construction of the NWRL. This includes maintained existing sight lines to T-Way bus stops and within T-Way car parks, where possible. Where this is not possible, suitable alternative measures would be implemented (e.g. CCTV with active surveillance) where reasonable and feasible.	Section 5.2 Individual work site CTMPs
58.	T10	The need for, and provision of, alternative remote parking locations and shuttle bus transfers for daytime and night time construction staff would be considered for all construction sites during detailed construction planning.	Section 5.2CTMPs
59.	T11	Special event bus services for Sydney Olympic Park (Royal Easter Show, and Major Sporting and Entertainment Events) would be managed, in particular, in Carrington Road at the Showground Station site, to ensure minimal disruption.	N/A
60.	T12	The Traffic and Transport Liaison Group established for the NWRL would consider individual events and any other special event needs, and make reasonable and feasible short-term adjustment to the construction phase activities and / or review and update detailed Construction Traffic Management Plans.	Section 5.6
61.	T13	Site traffic would be managed, where reasonable and feasible, to avoid significant movements in the AM peak in the critical southbound direction and in the PM peak in the critical northbound direction on Beecroft Road at Epping.	N/A
62.	T15	Access would be maintained to sections of the pedestrian bush track at Cheltenham which would not be affected by construction works. Additionally, the provision of an alternative track would be considered during construction planning.	N/A
63.	T16	Access to the Bella Vista Station site during the daytime would be at a location off Celebration Drive to the east of the Lexington Avenue intersection to minimise traffic impacts at the Celebration Drive / Lexington Avenue intersection. The Celebration Drive / Lexington Avenue intersection would be used as an access during the night and at low traffic times.	N/A

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No.	Original Ref.	Relevant Requirement	Reference
64.	T17	If construction of NWRL occurs before the Schofields Road upgrade, interim upgrading of the road would be undertaken (unless otherwise agreed with RMS) with improved pavement quality and wider sealed shoulders to accommodate heavy vehicle usage.	N/A
65.	T18	A dilapidation report would be prepared prior to construction for all affected local roads from the construction access / egress point to the arterial road.	Section 4.17
66.	T19	An alternative pedestrian route via Ray Road and Kandy Avenue would be appropriately signposted for pedestrian movements between Epping Town Centre and the Beecroft Road M2 Motorway overbridge.	N/A
67.	T20	Truck movements on Ray Road would be restricted during the AM and PM peak periods. During these times, truck access and egress to and from the site would be via Beecroft Road only.	N/A
68.	T21	Staff working at the Epping Services Facility would be discouraged from parking on local roads and encouraged to: <ul style="list-style-type: none"> <li>• Use public transport.</li> <li>• Car share.</li> <li>• Park in a designated off-site area and access the site via shuttle bus.</li> </ul>	N/A
69.	T22	Where schools occur in the immediate vicinity of the construction sites, heavy vehicle movements would be minimised (where reasonable and feasible), between 8:00-9:30 am and 2:30-4:00 pm Monday to Friday (on school days).	Section 4.11
70.	T23	Access and egress via Norwest Boulevard would be intermittent and only outside peak periods.	N/A
71.	T24	Signage would be established at Epping to direct pedestrians via the alternative pedestrian route along Ray Road and Kandy Avenue.	N/A
72.	T25	Construction traffic to and from the Cheltenham Services Facility would be directed to treat Beecroft Road / Kirkham Street intersection as left in / left out only.	N/A
73.	T26	Alternative access to the Showground would be developed and detailed in the relevant Construction Traffic Management Plan.	N/A

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No.	Original Ref.	Relevant Requirement	Reference
74.	T27	Alternative car parking would be provided, in consultation with The Hills Shire Council and the Castle Hill and Hills District Agricultural Society, for car spaces lost within the Showground precinct.	N/A
75.	T28	Provision for buses to safely pull up to the indented bus bay located on Norwest Boulevard east of Century Circuit would be investigated as part of the relevant Construction Traffic Management Plan.	N/A
76.	T29	Alternative car parking would be provided for car spaces lost at the Burns T-Way bus stop. The alternative parking may be accommodated at the Balmoral Road T-way bus stop.	Section 4.19 CTMSP
77.	T30	Alternative car parking would be provided for car spaces lost at the Riley T-Way bus stop. The alternative parking is likely to be provided to the north of Samantha Riley Drive.	Section 4.19 CTMSP Design Plan
78.	T31	An alternative location for the cycle lockers at Rouse Hill would be identified during detailed construction planning.	Confirmed location agreed meeting 10/07/14
79.	T33	Either Cudgegong Road or Tallawong Road would remain open to traffic and bus services to maintain a route from Guntawong Road to Schofields Road.	<b>Table 5-3</b> Individual work site CTMPs

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### 3.4 Deed Requirements

#### 3.4.1 Scope of Work and Technical Criteria (SWTC) Requirements

Table 3-5: SWTC Requirements relevant to the CTMP

No.	Original Ref.	Relevant Requirement	Reference
80.	SWTC Appendix 24 section 24.4 (k)	In addition to the requirements identified in the Project Planning Approvals, the Construction Traffic Management Plan must comply with and address the requirements of the Principal's General Specification G 10 and the SVC Contractor's traffic management and safety obligations in Schedule 33 of the deed as well as address and detail:	
		(i) the traffic and transport management team structure, including key personnel, authority and roles of key personnel, lines of responsibility and communication, minimum skill levels of each role and interfaces with the overall project organisation structure;	Section 6
		(ii) traffic management responsibilities of all relevant construction personnel in regard to all aspects of construction of the Project Works and the Temporary Works;	Section 6
		(iii) strategies and methodology for the management of impacts on road traffic and public areas including the minimisation of impacts on landowners and local businesses that are affected by the Project Works, the Temporary Works and the SVC Contractor's Activities;	Section 4.12
		(iv) strategies and methodology for ensuring the safety and amenity of the Affected Public and Road Users;	Section 5 <b>Table 5-3</b>
		(v) traffic and transport management arrangements and procedures, including those related to:	
		A. site security, site access and signage;	Security Management Plan
		B. Road User delay management;	Section 5 <b>Table 5-3</b>

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No.	Original Ref.	Relevant Requirement	Reference
		C. information signage and advance warning signs;	Section 5 <b>Table 5-3</b>
		D. speed limit signage;	Section 5 <b>Table 5-3</b> Section 3.5.5
		E. traffic switching arrangements and procedures;	Section 5 <b>Table 5-3</b>
		F. provisions for special events;	Section 5 <b>Table 5-3</b>
		G. frequency of inspections; and	Section 5 <b>Table 5-3</b>
		H. emergency and incident responses;	Section 5 <b>Table 5-3</b> SSERP
		(vi) traffic management strategies and construction staging in relation to the properties around the Construction Site and the road network that are affected by the SVC Contractor's Activities; and	Section 5 <b>Table 5-3</b> CTMSP
		(vii) strategies and methodology for the communication of changes to traffic flow, vehicle, pedestrian and bicycle movements and arrangements to Road Users and the Affected Public.	Section 5 <b>Table 5-3</b>

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### 3.4.2 Construction Environmental Management Framework (CEMF) Requirements

Table 3-6: CEMF Requirements relevant to CTMP

No.	Original Ref.	Relevant Requirement	Reference
81.	8.1(a)	The following traffic management objectives will apply to the construction of the project: i. Minimise disruptions to pedestrians, cyclists, buses and motorists. ii. Minimise heavy vehicle movements during peak traffic periods. iii. Minimise access disruptions to adjoining properties. iv. Encourage sustainable transport options by site workers.	<b>Table 5-3</b>
82.	8.2(a)	NWRL Principal Contractors will develop and implement a hierarchy of traffic management documentation including: i. A Construction Traffic Management Plan setting out the overall traffic management resources, processes and procedures for the management of traffic and transport during construction of the Project Works and Temporary Works; and ii. Construction Traffic Control Plans setting out the specific traffic and transport management arrangements to be implemented at specific locations during the construction of the Project Works and Temporary Works.	<b>Table 5-3</b> CTMSPs and associated CTCPs
83.	8.2(b)	TfNSW and its Contractors will undertake liaison with agencies and the community regarding traffic management. This will involve: i. Establishment of a Traffic and Transport Liaison Group likely to consist of representatives from NWRL Contractors, TfNSW, RMS, NSW Police and bus operators. The group would review Road Occupancy Licence Application to monitor potential cumulative impacts from multiple Road Occupancy Licences operating concurrently in one area. ii. Establishment of a Central Project Coordination Committee which will seek to coordinate NWRL works with other major developments. The committee will also take a strategic approach to longer term traffic and transport management and review permanent arrangements including network integration with NWRL facilities.	In lieu of CPCC, ISJV shall attend interface meeting with RHTC and directly contact other major developments on a needs basis. Section 6.4.5
84.	8.3	Examples of traffic mitigation measures include: <ul style="list-style-type: none"><li>Minimising heavy vehicle movements during peak traffic times.</li><li>Avoidance of local road for heavy vehicle routes, where feasible.</li></ul> Providing safe pedestrian and cyclist movements around the worksites.	Section 5.2, 4.11

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### 3.4.3 WAD Requirements

The following items need to be read in the context of how ISJV plan to enable TfNSW for fulfilling their obligations under the WAD.

No.	Original Ref.	Relevant Requirement of TfNSW	Reference
85.	Section 5 a)	How work practices and equipment must provide for the safe passage of all road users, including public transport, pedestrians and pedal cyclists, at all times during the Works	Section 5 of this plan and CTMSP
86.	Section 5 b)	Comply with RMS QA Specification G10, traffic management practices set out in the TCAWS Manual, all RMS Technical Directions (current as at the date of this Deed), Austroads and RMS Supplements and Australian Standard AS1742.3 - 2008 and any other relevant Australian Standards	Section 3.5.7 of this plan and CTMSP
87.	Section 5 c)	Contain scaled drawings of the affected section of road including lane widths, sign spacing and traffic control devices proposed. If temporary pavement marking changes are proposed then a TCP is also required for the pavement marking. The Designer of the TCP must have visited the site to ensure that the proposed location of signage is suitable and practical	Section 5 CTMSP.
88.	Section 5 d)	How access to private land is to be maintained or appropriate detours and arrangements provided	Section 4.12 CTMSP
89.	Section 5 e)	Contain appropriate signage to warn road users of construction vehicle entry/exit points and of excavations	Section 5. Detailed in CTMSP.
90.	Section 5 f)	Identify a Vehicle Movement Plan (where required by TCAWS) showing signage and other directional devices	This CTMP and CTMSP
91.	Section 5 g)	Be signed and dated including the Designer's certificate number	CTMSP
92.	Section 5 h)	How and when road safety audits of all traffic management, compliance with the Traffic Management and Safety Plan and all TCPs are to be carried out	Section 6.6
93.	Section 5 i)	Obtain approval from the RMS Representative and other relevant Government Agencies, prior to implementing any traffic adjustments or interruption, noting that that traffic changes or lane closures which are considered by RMS as likely to cause unnecessary delay or disruption to traffic will not be permitted	CTMP Section 3.5, 5.3 CTMSP
94.	Section 5 j)	How TCPs must be regularly reviewed and modified in conjunction with the RMS Representative, traffic management personnel, and emergency services personnel and any other relevant Government Agency	CTMP Section 3.5, 5.3



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No.	Original Ref.	Relevant Requirement of TfNSW	Reference
			CTMSP
95.	Section 5 k)	Where road works speed zone restrictions are proposed, a Speed Zone Authorisation is required	CTMP Section 3.5, 5.3 CTMSP
96.	Section 5 l)	How traffic will be managed during any emergency identified in the Emergency Response Plan or other emergency work	SSERP
97.	Section 5 m)	How TfNSW or its contractor must manage, control, maintain and operate all construction vehicles including to ensure:  (i) no loss of fuels, lubricants, loads or other substances, whether in the form of dust, liquids, solids or otherwise and also loads must be covered to prevent loss / nuisance;  (ii) that no mud, dirt or other material is deposited onto any road which is open to the public by installing, maintaining and utilising wheel wash facilities or other devices; and  (iii) that all vehicles involved in the Works must only enter, operate within or exit from a traffic flow in a manner which does not endanger the public and under suitably designed and appropriate traffic control measures.	Environmental Management Plan CTMP Section 4.11

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### 3.5 Licence and Permit Requirements

#### 3.5.1 EPA Licence

Table 3-7: EPL Requirements relevant to the CTMP

No.	Original Ref.	Relevant Requirement	Reference
98.		To be completed when an EPL related to the SVC works is issued. Unlikely to be any EPL requirements relating to traffic other than out of hours works requirements.	N/A

#### 3.5.2 RMS Design Approvals in Accordance with the Works Authorisation Deed (WAD)

The design of the works needs RMS approval prior to works beginning. This approval is sought through the design process with RMS Approval to Commence Construction in accordance with the Works Authorisation Deed in Section 13.2 for works interfacing with the RMS road network.

#### 3.5.3 Road Occupancy Licence (ROL)

A Road Occupancy Licence allows the proponent to use a specified road space at approved times, provided certain conditions are met. The Licence applies to the occupation of the “road space” only and does not imply permission or approval for the actual (physical) works being undertaken. It is up to the proponent to obtain the relevant approvals from other agencies as required

Obtaining a Road Occupancy Licence for the specified activities is a legal requirement under Section 138 of the Roads Act.

Prior to commencement of any construction works and/or major traffic switches on the designated “classified” road network a Road Occupancy Licence application will be submitted to TfNSW Transport Management Centre for approval. Each application is to include individual site CTCP.

Road occupancies that may impact solely upon “unclassified” (Council) roads, application for a Road Occupancy Permit will be made to the relevant local Council authority.

#### 3.5.4 Council Road Occupancy Permit (ROP)

Any construction works where excavation or other works are required within the Council road will require a ROP.

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Prior to commencement of any construction works and/or major traffic switches on the designated “unclassified” road network a Road Occupancy Permit application will be submitted to the administrative Council for that road, if required and Council will be provided the copy of the Road Occupancy License from RMS TMC for their records. Each application is to include individual site CTCP.

### 3.5.5 Speed Zoning Authorisation (SZA)

Where warranted and prior to commencement of any construction works and/or major traffic switches on the designated road network, either classified or non-classified and in consultation with Police, TTLG and relevant Council, a Speed Zone Authorisation application will be submitted to TfNSW Transport Management Centre for approval to change the speed limit signs at or around individual work sites and the changing of electronic variable speed limit signs managed by the RTA (where applicable).

Each application is to include individual site CTCP.

### 3.5.6 Works Authorisation Deed (WAD)

Table 3-8: Schedule of Hold Points Identified in the WAD

No.	Original Ref.	Relevant Requirement	Reference
99.	Exhibit K Third Party Agreements - Works Authorisation Deed (Schedule 3 – Part 2)	Certificate for the Road Works	These will be provided with final submission of the CTMSP
100.	Exhibit K Third Party Agreements - Works Authorisation Deed (Schedule 4)	Certificate of Practical Completion – Road Works	In accordance with Quality Management Plan
101.	Exhibit K Third Party Agreements - Works Authorisation Deed (Schedule 5)	Certificate of Final Completion – Road Works	In accordance with Quality Management Plan
102.	Exhibit K Third Party Agreements - Works Authorisation Deed (Schedule 6)	Certificate of Inspection, Testing and Quality Systems	In accordance with Quality Management Plan

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103.	Exhibit K Third Party Agreements - Works Authorisation Deed (Schedule 7)	Certificate of Completion – NRWL Works	In accordance with Quality Management Plan
104.	Exhibit K Third Party Agreements - Works Authorisation Deed (Schedule 8)	Proof Engineer's Deed Poll	In accordance with the Design Management Plan
105.	Exhibit K Third Party Agreements - Works Authorisation Deed (Schedule 9)	Proof Engineer's Certificate	In accordance with the Design Management Plan

### 3.5.7 G10 Traffic Management Requirements

SWTC Appendix 9-G10 Traffic Management have the following Hold Points and Identified Records to be created as per the Table 3-9 Schedule of Hold Points in G10 Traffic Management and Table 3-10 Schedule of Identified Records in G10 Traffic Management.

Table 3-9: Schedule of Hold Points in G10 Traffic Management

No.	Original Ref.	Relevant Requirement	Reference
106.	SWTC Appendix 9-G10 Traffic Management G10 Clause 3.4	Opening to traffic for temporary roadways and detours, where required.	In accordance with Quality Management Plan

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Table 3-10: Schedule of Identified Records in G10 Traffic Management

No.	Original Ref.	Relevant Requirement	Reference
107.	SWTC Appendix 9-G10 Traffic Management G10 Clause 2.2	Construction Traffic Management Plan, where required.	In accordance with Section 6 of the CTMSP.
108.	SWTC Appendix 9-G10 Traffic Management G10 Clause 2.3	Full details of the Traffic Control Plans including temporary signposting, traffic control devices and traffic control methods, where required.	In accordance with Section 6 of the CTMSP.
109.	SWTC Appendix 9-G10 Traffic Management G10 Clause 3.4	Notice that temporary roadways and detour to traffic (including portable signs or temporary traffic signals) are conforming, where required.	In accordance with Section 6 of the CTMSP.

These Hold and Witness Points and Identified Records shall be managed via the Section 6 – Implementation of each CTMSP.

## 4 CONSTRUCTION TRAFFIC IMPACTS

ISJV has considered traffic impacts, access issues, delay times at intersections, bus routes, bicycle routes, access and mobility routes, and pedestrian flows in designing and staging construction activities. Some disruption to existing traffic patterns will occur during the construction period. However, the strategy is to minimise, and where possible, eliminate disruption through effective traffic management techniques.

Main activities that will impact on traffic during the SVC Works construction period are shown below.

Table 4-1: Construction activities and impacts

Activity	Impact
Haulage routes	Increased heavy vehicle traffic on local roads, congestion, potential damage to roads
Construction vehicle movements	Increase in traffic
Deliveries to site, including viaduct segments and materials	Increase in traffic; potential for traffic delays near access points; potential disruption to bus services and pedestrian and cycle movements
Construction vehicle access (heavy and light)	Increase in traffic; potential for traffic delays near access points; potential disruption to bus services and pedestrian and cycle movement
Removal of spoil	Increase in traffic; potential for traffic delays near access points; potential disruption to bus services and pedestrian and cycle movements
Road and/or lane closures associated with implementing TCPs	Potential congestion, potential driver awareness/appreciation; access for emergency services restricted
Detours	Delays for through traffic; issues with access to properties in closed areas and along the detour route
Movement of equipment, including the gantry, along the SVC alignment	Road closures and inconvenience to road users
Construction worker parking – on-street and off-street	Reduction in public parking; slow moving traffic
Parking area land-take for construction area	Relocated public parking may impact pedestrian movements; a possible reduction in parking in local area
Changes to T-Way parking and pedestrian access	Potential public interaction with the construction site traffic Potential interaction with the operation of the T-Way
Pedestrian and bicycle rerouting past construction sites	Potential public interaction with the construction site traffic
Changes to surrounding property access	May slow traffic; may cause driver confusion Interruption to businesses operating on access roads
Changes to bus stops	Pedestrian safety may be affected

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Activity	Impact
Utilities and Services Relocation	Interruption to services
Public Events	Interruption to public transport services to major public events

### 4.1 Identified Impacts

The construction of SVC Works will impact on the existing traffic flows along various roads in close proximity to the works. However, as detailed in this plan, ISJV will aim to isolate work areas, keep road user delays to an absolute minimum and maintain access for transport operators.

Wider traffic implications and significant impacts that could result from construction activities within an operation have been avoided during pre-construction planning regarding traffic management in the following ways:

- The capacity of roads (number of traffic lanes) during peak times will be maintained where possible in each direction to limit the potential for significant traffic delays
- If works requiring lane occupancies are proposed during the day it will be, nominally, after 10am and prior to 3pm and at night (nominally after 8pm and prior to 5am subject to approvals) when traffic volumes are lower and traffic arrangements may be implemented with minimal overall traffic disruption

Some traffic impacts are, however, unavoidable. During the construction stage, the potential restrictions will include:

- One lane alternate (stop/slow) operations which may result in temporary delays
- Haulage operations and over-dimension vehicle movements which may create temporary traffic hazards for other vehicles in the vicinity of haulage operations [these are proposed to be predominately at night]
- Short term lane closures with reduced speed limit [anticipated to be limited to night time staging at heavy lifts at intersections]
- Full road (short term) closures
- Full long term road closure of Balmoral Road

ISJV will maintain access for all vehicles, though some temporary short term closures may be required. Prior to construction all roads potentially used/affected by construction traffic will be part of a dilapidation survey (excluding regional, arterial and other major roads) as per the Deed.

The survey will investigate a pre-determined table of affected roads and take into account, but be not limited to, the following:

- Kerb and gutter (likely to be within a vehicle/s path)
- Speed humps
- Low hanging trees
- Street furniture
- Any existing damage to road pavement or road furniture
- Existing potholes/pavement damage
- Cracking and rutting
- Any existing damaged items

The final report (supplied to Local Councils and RMS) will include a written survey, photos and/or video of each road. To keep the road user delays to a minimum ISJV will plan and stage all works to prevent road occupancies during peak periods.

The ISJV will conduct an assessment of the road network directly affected by the construction activities and where required include the results in the relevant CTMSP. The facilities to be assessed will include, but are not limited to:

- Existing on-street parking, (including type and associated time limits)
- Existing Traffic Controls
- Traffic Control Signals (TCS) at intersections
- Existing junction configurations
- Restrictions on existing traffic movements
- Existing road occupancies
- Public Transport (buses (includes stops), taxis)
- Traffic generating developments, (e.g. schools, shopping centres, churches, industrial areas, Hospitals, TSC contractor, ETTT Contractor, RMS roads upgrades anticipated in the area)
- Temporary access arrangements or restrictions for local residents, businesses,
- Emergency vehicle access points
- Heavy vehicle movement restrictions, including over dimension vehicle loads
- Pedestrians, including disabled persons
- Cyclists

Cyclist access and pedestrian access to several bus stops would be affected by the construction activity with temporary diversions for buses and passengers which is detailed in various CTMSPs.

Various community, environmental and traffic management measures will be applied, in particular those measures that maintain access to the road network. These will include:

- Considering the access requirement of adjacent properties when determining compound and construction site access points
- Minimising queuing of construction vehicles in the local road network
- Using major arterial roads and regional roads wherever practicable for haulage routes (Old Windsor Road and Windsor Road)
- Providing sufficient parking facility compounds for personnel (Samantha Riley Drive compound/ off site batching plant compound)
- Reinforcing the need to maintain property access along the project alignment via awareness training as required
- Reviewing potential property access issued during site inspections and implementing appropriate corrective actions if issues are identified
- Advise of changes through the TTLG

Stakeholders, including but not limited to: Local Councils, Utility Agencies (water, electricity, gas, telecommunications) and any existing owners will be permitted access to any infrastructure/property they may have within the works after consultation with the project.

## 4.2 Traffic Provisions

The Construction Traffic Control Plans, Pedestrian Movement Plans and Vehicle Movement Plans prepared as part of the CTMSP make allowance for traffic provisions.

The access/egress points for the works were developed during the concept design phase based on anticipated construction and cumulative construction and existing traffic as identified in Table 2.6 of Section 2.2.2 Intersection Modelling, within Technical Paper 1 of the EIS 1 Construction Traffic and Transport Technical Paper. These have taken into account the current and forecast traffic counts and anticipated construction traffic counts.



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The ISJV construction traffic has been further analysed with construction activity specific traffic counts developed in order to determine the estimated traffic movements to each of the locations in any given time.

The specific road-by-road traffic impacts are identified in Table 4.2.

Table 4-2: Increases on Existing Network Due to Construction Traffic

Existing Road Network	Agency	Lanes	AADT	2011 Peak Hour Volume	% Estimated Increase During Construction ISJV Works	Comments
Windsor Road	RMS	4	37,382	Eastbound AM 673 (7.15-8.15am) PM 593 (5-6pm) Westbound AM 566 (7.45-8.45am) PM 1,056 (5-6pm)	120 vehicle movements per day allowing for 2 x concurrent work fronts which amounts to an increase of < 1%.	No impacts from other concurrent works.
Balmoral Rd	Hills Shire Council	2	872	Eastbound AM 16 (7:00 - 8:00) PM 14 (5-6) Westbound AM 112 (8-9) PM 66 (3-4)	60 vehicle movements per day which amounts to an increase of <7%	160 vehicle movements per day as per EIS requirements for TSC Contractor which amounts to an increase of 18%.
Memorial Ave	RMS	2	21,660	Eastbound AM 1,406 (8-9am) PM 885 (5-6pm) Westbound AM 744 (11-12am) PM 952 (4-5pm)	60 vehicle movements per day which amounts to an increase of <1%	160 vehicle movements per day as per EIS requirements for TSC Contractor which amounts to an increase of < 1%.
Old Windsor Road	RMS	4	49,004	Northbound AM 1,466 (7.30-8.30am) PM 1,392 (4.15-5.15pm) Southbound AM 1,769 (7-8am) PM 1,552 (4.15-5.15pm)	120 vehicle movements per day allowing for 2 x concurrent work fronts which amounts to an increase of < 1%.	No impacts from other concurrent works.

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Samantha Riley Dr	Hills Shire Council	4	13,165	Eastbound AM 748 (8-9am) PM 627 (6-7pm) Westbound AM 627 (8-9am) PM 672 (5-6pm)	The impact on the road network is the access/egress of the site workforce which has an impact of increasing the AADT of Samantha Riley Drive by a 300 vehicle movements which amounts to an increase of 3% . While the overall AADT impact is insignificant the peak hour impact is an increase of 23% if the staff access/egress all within the same time period.	No impacts from other concurrent works.
Sanctuary Dr	Hills Shire Council	2	2,657	Eastbound AM 94 (10-11am) PM 116 (3-4pm) Westbound AM 183 (8-9am) PM 153 (5-6pm)	The anticipated vehicle movements per day are 60 vehicle movements. These 60 vehicle movements would enter via the Sanctuary Drive access point and would be shared with the Picket Place and the White Hart Drive exit points. These 60 vehicle movements per day leads to an increase of <2%	No impacts from other concurrent works.
White Hart Dr	Hills Shire Council	4	10,820	Eastbound AM 860 (11-12am) PM 822 (12-1pm) Westbound AM 512 (11-12am) PM 584 (5-6pm)	The anticipated vehicle movements per day are 30 vehicle movements. These 30 vehicle movements per day leads to an increase of <1%	No impacts from other concurrent works.

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Rouse Hill Dr	Hills Shire Council	4	9,319	Eastbound AM 612 (9-10am) PM 576 (6-7pm) Westbound AM 695 (11-12am) PM 711 (12-1pm)	The anticipated vehicle movements per day are 30 vehicle movements. These 30 vehicle movements per day leads to an increase of <1%	No impacts from other concurrent works.
Commercial Rd	Hills Shire Council	4	5,676	Eastbound AM 207 (8-9am) PM 308 (6-7pm) Westbound AM 361 (8-9am) PM 282 (3-4pm)	The anticipated vehicle movements per day are 30 vehicle movements. These 30 vehicle movements per day leads to an increase of <1%	No impacts from other concurrent works.
Schofields Rd	RMS	4	11,594	Eastbound AM 571 (9-10am) PM 553 (6-7pm) Westbound AM 523 (11-12am) PM 676 (5-6pm)	These works thence have an impact of increasing the AADT of Schofields Road by 33 vehicle movements which amounts to an increase of <1%	No impacts from other concurrent works.
Cudgegong Rd	Blacktown City Council	2	1,461	Northbound AM 112 (8-9am) PM 117 (3-4pm) Southbound AM 93 (8-9am) PM 97 (3-4pm)	The anticipated vehicle movements per day are 60 vehicle movements. These 60 vehicle movements per day leads to an increase of 1%.	No impacts from other concurrent works.

The interactions with the existing traffic network at the access/egress points due to particular vehicle types proposed is shown in Table 4.3.

Table 4-3: Traffic Interactions with Existing Traffic at Access/Egress Points

Drg Ref No	WAD Description	Queuing Storage At Access/Egress
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NWRLSVC-IWP-SVCDN-DWG-850310	WAD Package 7 - Balmoral Road Construction Access	<p>Access: 1 x single unit truck storage within the site prior to interaction with Balmoral Road.</p> <p>0 x truck and dog storage within site prior to interaction with Balmoral Road.</p> <p>Access: 7 x single unit trucks storage within Balmoral Road prior to interaction with Taggart Way.</p> <p>4 x truck and dog storage within Balmoral Road prior to interaction with Taggart Way.</p> <p>Egress: 16 x truck and dog storage within site prior to interaction with Balmoral Road.</p> <p>Egress: 4 x truck and dog storage within Balmoral Road prior to interaction with Taggart Way.</p>
NWRLSVC-IWP-SVCDN-DWG-850320	WAD Package 8 - Memorial Avenue Memorial Avenue And T-Way Construction Access [Burns T-Way Carpark side] Vehicles access left in / left out Old Windsor Road (Burns T-Way car park) (see CTMSP)	<p>Access: 6 x single unit trucks or 4 x truck and dog storage within dedicated turn-lane on Old Windsor Road.</p> <p>Egress: 6 x single unit trucks 3 x truck and dog storage within existing carpark prior to interaction with Old Windsor Road.</p>
NWRLSVC-IWP-SVCDN-DWG-850320	WAD Package 8 - Memorial Avenue Memorial Avenue And T-Way Construction Access [Opposite Burns T-Way Carpark side] Vehicles access via Left in / Left out on Old Windsor Road (see CTMSP)	<p>Access: 1 x single unit truck or 1 x truck and dog storage within Old Windsor Road.</p> <p>Needs control of access/egress to ensure traffic flow.</p> <p>Egress: multiple truck storage within site prior to interaction with Old Windsor Road.</p>
NWRLSVC-IWP-SVC-DN-DWG-850330	WAD Package 9 - Burns T-Way Station Alteration To T-Way Roundabout (not used)	Noted in WAD Package 8 above.

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NWRLSVC-IWP-SVC-DN-DWG-850340	WAD Package 10 - Riley T-Way Station Riley T-Way Interchange Construction Access [T-Way Carpark side]	Access: 11 x single unit truck storage length within the existing carpark access road prior to interaction with the proposed new carpark 8 x truck and dog storage length within the existing carpark access road prior to interaction with the proposed new carpark.  Egress: multiple truck storage within haul road prior to interaction with carpark access road.
NWRLSVC-IWP-SVC-DN-DWG-850340	WAD Package 10 - Riley T-Way Station Riley T-Way Interchange Construction Access [Opposite T-Way Carpark side]	Access: 1 x single unit truck storage length within the site access point prior to interaction with Samantha Riley Drive 0 x truck and dog storage length within the site access point prior to interaction with Samantha Riley Drive.  Egress: multiple truck storage within haul road prior to interaction with Samantha Riley Drive
NWRLSVC-IWP-SVC-DN-DWG-850350	WAD Package 11 - Old Windsor Road Old Windsor Road Construction Accesses	Access: 5 x single unit truck storage length within side road prior to interaction with Windsor Road 1 x truck and dog storage length within side road prior to interaction with Windsor Road.  Egress: multiple truck storage within haul road prior to interaction with Windsor Road.
NWRLSVC-IWP-SVCDN-DWG-850360	WAD Package 12 - Sanctuary Drive Sanctuary Drive Construction Access	Access: 2 x single unit truck storage length within turn lane prior to interaction with Sanctuary Drive.  1 x truck and dog storage length within turn lane prior to interaction with Sanctuary Drive. Controlled access required to ensure continuous traffic flow if adopting truck and dogs.  Egress: 5 x single unit truck storage length within site prior to interaction with T-Way, Picket Place or Sanctuary Drive. 2 x truck and dog storage length within site prior to interaction with T-Way, Picket Place, or Sanctuary Drive.

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NWRLSVC-IWP-SVC-DN-DWG-850370	WAD Package 13 - Rouse Hill Town Centre Rouse Hill Town Centre Construction Access (not used) Access via Windsor Road and egress via White Hart Drive (see CTMSP)	Access: 1 x storage length prior to access to site compound. Access/egress would be controlled to ensure continuous traffic flow.  Egress: multiple storage length within site prior to interaction with existing T-Way.
NWRLSVC-IWP-SVC-DN-DWG-850380	WAD Package 14 - Rouse Hill From Windsor Road Windsor Road Construction Access	Access: 4 x single unit truck storage length within current bus stop. 3 x truck and dog storage length within current bus stop.  Egress: multiple storage length within site prior to interaction with existing T-Way or Windsor Road.
NWRLSVC-IWP-SVC-DN-DWG-850390	WAD Package 15 - Schofields Road Schofields Road Construction Access	

The following Sections 4.2 to 4.10 within this Plan detail the Construction Traffic Management Sub-Plans which will be developed for the project progressively as per the programme requirements and prior to construction commencement at each site.

### 4.3 Bella Vista Construction Area

The access to and from the Bella Vista Construction Area is proposed to be from Balmoral Road, Celebration Drive and Memorial Avenue. Balmoral Road is not a heavily trafficked road and it has only a left in, left out facility from Windsor Road.

The haul road within the Bella Vista Construction Area will run along both sides of the rail corridor with limited possibility to cross over.

Cutting north of Bella Vista Station Ch: 40461 to 41355 within Bella Vista Construction Area:

- Average 600 tonnes/day or 33 truck movements per day or 6 truck movements per hour
- Peak 1000 tonnes/day or 55 truck movements per day or 9 truck movements per hour
- Total 200,000 tonnes of material movement
- Total 11,111 truck movements.
- Peak times to be avoided 8 am to 9am and 3pm to 4pm.

These works thence have an impact of increasing the AADT of Balmoral Road by 33 vehicle movements which amounts to an increase of 8% based on the traffic counts undertaken by Aurecon-Arup for the preparation of the EIS.

These activities are programmed to avoid interference with the TSC contract thence will be the only construction activity in this area at this time. This increase of 8% will be for an estimated duration of six (6) months towards the end of the construction programme in 2015.

During the Balmoral Road reconfiguration works, access will be from the existing Balmoral Road formation and from the Memorial Construction Area via the Haul Road (Memorial Avenue).

The following further plans are in-progress for this site as part of the CTMSP:

- Detailed plans for the individual worksite area addressing legislative and contractual requirements, including, design of the Works Authorisation Deed Works package for the access/egress point and the interface with the T-Way;
- Construction route haulage management plans;
- Internal/external haul road design package;
- Temporary works design package;
- Traffic staging plan packages;
- Road condition surveys; and
- Traffic counts and modelling results.

### 4.4 Memorial Avenue Construction Area

Memorial Avenue Construction Area- (Left-right in, left-right out access via Balmoral Road off Old Windsor Road and Left in, Left-out access via the Burns T-Way carpark entrance off Old Windsor Road and left in-left out Old Windsor Road).

In the Concept Construction Traffic Management (CCTM) traffic modelling for the Old Windsor Road / Memorial Avenue intersection finds that it operates at near capacity - with a Level of Service F. Thence long delays are experienced on the northern, southern and western approaches prior to the ISJV site works beginning.

EIS modelling indicates that this intersection has a Degree of Saturation of 0.98. With construction activities as estimated in the CCTM, modelling indicates that the average delay per vehicle will more than double, climbing from 78.1 to 184.7 seconds.

EIS modelling further predicts that the resulting mean queue on the northern leg of Old Windsor Road will increase significantly from 235 metres to 559 metres.

The diagram below shows the accesses to the Memorial Construction Area and the main impact of site generated traffic on the local road network from the original EIS design and proposal.

The primary haulage route will be from the proposed concrete batching plant in Mulgrave and will run along Windsor Road to the worksite. This is shown Figure 5.0: Extract of Haulage Route Map – Mulgrave to Memorial Avenue Construction Area – heavy vehicle route.



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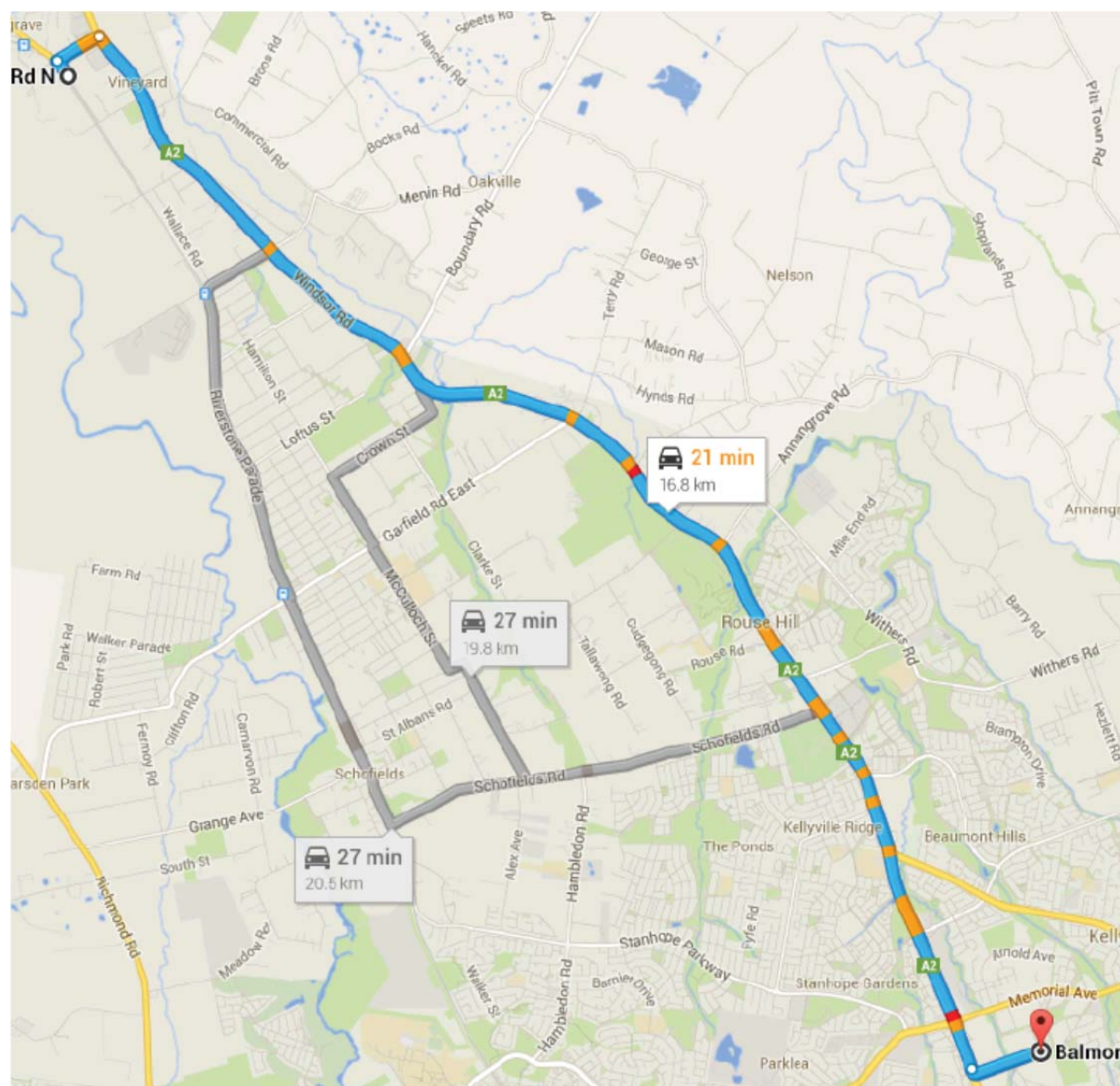


Figure 5: Extract of Haulage Route Map – Mulgrave to Memorial Avenue Construction Area – heavy vehicle route  
The end of journey access points are indicated below.



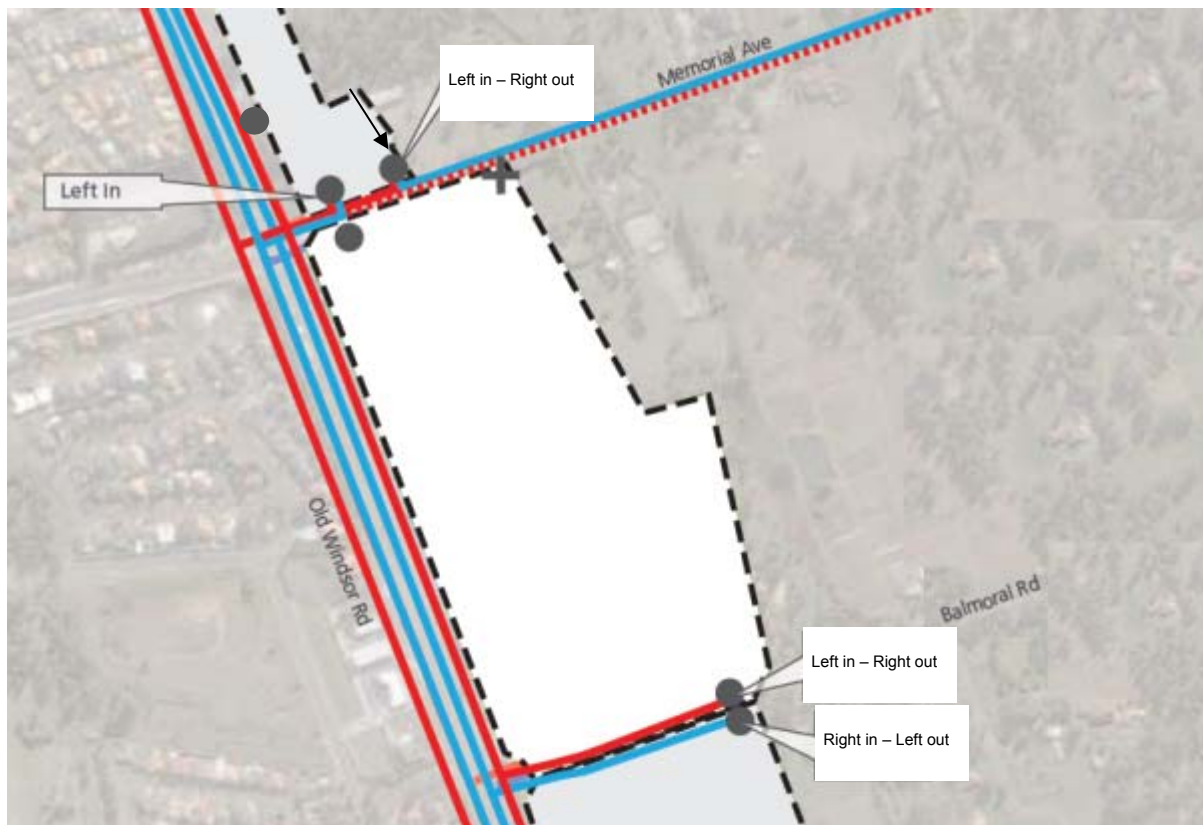


Figure 6: Balmoral Road to Memorial Avenue – heavy vehicle route

- Clear and grub, and access road construction Ch: 41360 to 41620 within the Memorial Avenue Construction area:
  - Average 600 tonnes/day or 33 truck movements per day or 6 truck movements per hour
  - Peak 1000 tonnes/day or 55 truck movements per day or 9 truck movements per hour
  - Total 500-1000 tonnes of material movement
  - Total 25-55 truck movements.
  - Peak times to be avoided 8 am to 9am and 3pm to 4pm.
- Pier excavation works Ch: 41360 to 41620 within the Memorial Avenue Construction area:
  - Average 600 tonnes/day or 33 truck movements per day or 6 truck movements per hour
  - Peak 1000 tonnes/day or 55 truck movements per day or 9 truck movements per hour
  - Total 1750 tonnes of material movement
  - Total 100 truck movements.
  - Peak times to be avoided 8 am to 9am and 3pm to 4pm.

# Construction Traffic Management Plan

## Surface and Viaduct Civil Works



- Pile reinforcement deliveries works Ch: 41360 to 41620 within the Memorial Avenue Construction area
  - Average 100 tonnes/day or 6 truck movements per day or 1 truck movements per hour
  - Peak 120 tonnes/day or 7 truck movements per day or 1 truck movements per hour
  - Total 150 tonnes of material movement
  - Total 9 truck movements.
  - Peak times to be avoided 8 am to 9am and 3pm to 4pm.
- Pile concrete placement works Ch: 41360 to 41620 within the Memorial Avenue Construction area:
  - Average 250 m3/day or 50 truck movements per day or 8 truck movements per hour;
  - Peak 300 m3/day or 60 truck movements per day or 10 truck movements per hour;
  - Total 400 m3 of concrete movement;
  - Total 80 truck movements.
  - Peak times to be avoided 8 am to 9am and 3pm to 4pm.
- Pier reinforcement deliveries works Ch: 41360 to 41620 within the Memorial Avenue Construction area
  - Average 100 tonnes/day or 6 truck movements per day or 1 truck movements per hour
  - Peak 120 tonnes/day or 7 truck movements per day or 1 truck movements per hour
  - Total 150 tonnes of material movement
  - Total 9 truck movements.
  - Peak times to be avoided 8 am to 9am and 3pm to 4pm.
- Pier concrete placement works Ch: 41360 to 41620 within the Memorial Avenue Construction area:
  - Average 250 m3/day or 50 truck movements per day or 8 truck movements per hour;
  - Peak 300 m3/day or 60 truck movements per day or 10 truck movements per hour;
  - Total 1000 m3 of concrete movement;
  - Total 200 truck movements.
  - Peak times to be avoided 8 am to 9am and 3pm to 4pm.

These works thence have an impact of increasing the AADT of Balmoral Road by 60 vehicle movements which amounts to an increase of 13% based on the traffic counts undertaken by Aurecon-Arup for the preparation of the EIS.

These works thence have an impact of increasing the AADT of Old Windsor Road by 60 vehicle movements which amounts to an increase of <1% based on the traffic counts undertaken by Aurecon-Arup for the preparation of the EIS.

The following further plans are in-progress for this site as part of the CTMSP:

- Detailed plans for the individual worksite area addressing legislative and contractual requirements, including, design of the Works Authorisation Deed Works package for the access/egress point and the interface with the T-Way;
- Construction route haulage management plans;
- Internal/external haul road design package;
- Temporary works design package;
- Traffic staging plan packages;
- Road condition surveys; and
- Traffic counts and modelling results, where required.

### 4.5 Kellyville Construction Area No 1

Kellyville Construction Area No 1 (Left-in, Left-out, Right-in, Right-out, access via Samantha Riley Drive off Old Windsor Road for the second sections of works).

The intersection of Old Windsor Road and Samantha Riley Drive currently operates at capacity with a Level of Service F. Long delays are experienced on the northern, southern and western approaches.

The intersection currently has a Degree of Saturation of 0.97.

The primary haulage route will be from the proposed concrete batching plant in Mulgrave and will run along Windsor Road to the worksite. This is shown following depending on which side of the worksite the delivery is required.

# Construction Traffic Management Plan

## Surface and Viaduct Civil Works

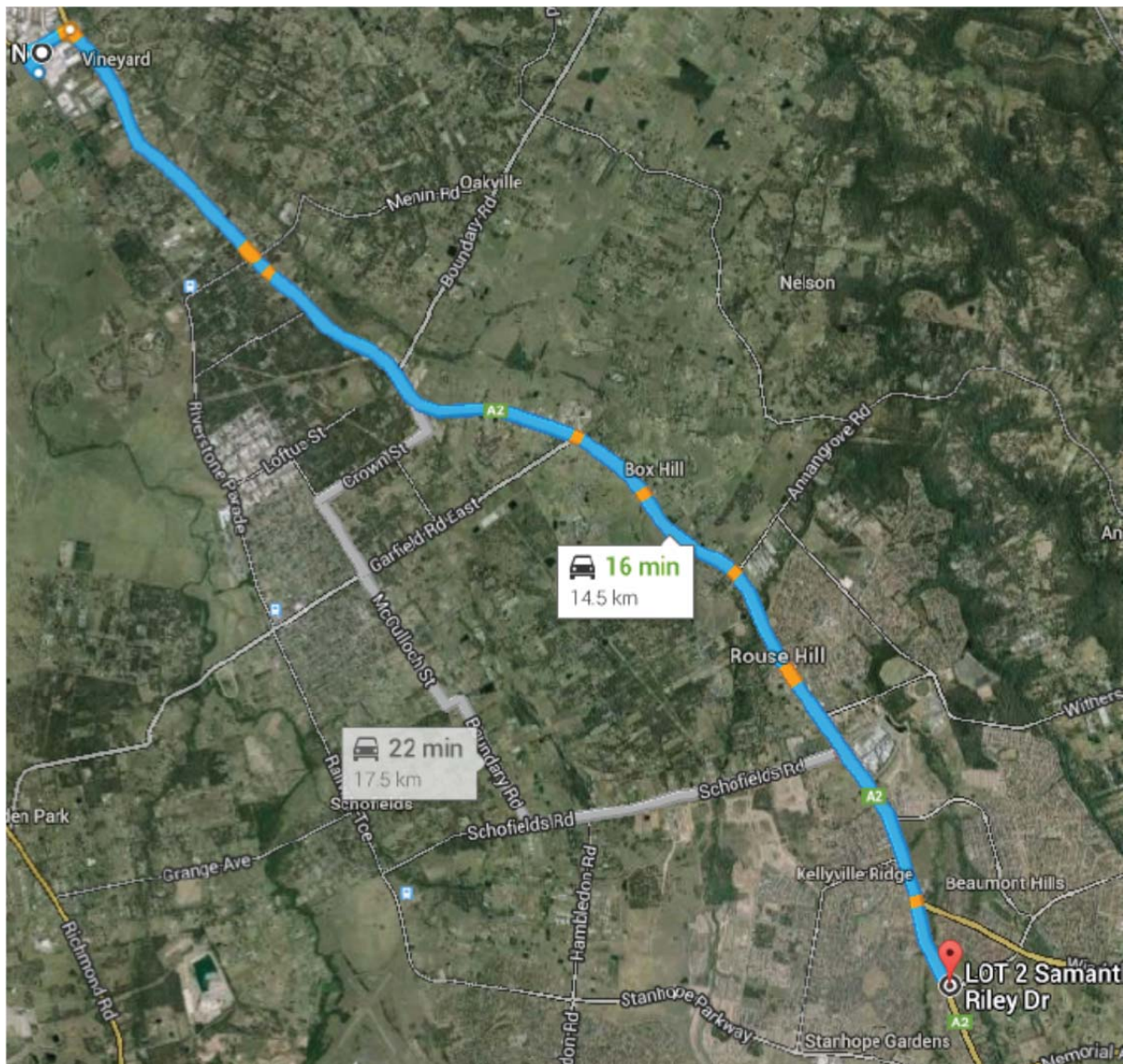


Figure 7: Extract of Haulage Route Map – Mulgrave to Kellyville Construction Area No 1 and No 2– heavy vehicle route

The heavy vehicle route end of journey plan is shown in following. This is the predominant access point for this worksite area in order to minimise interfaces with the T-Way at the Memorial Avenue end.



# Construction Traffic Management Plan

## Surface and Viaduct Civil Works



Figure 8: Extract of Haulage Route Map – Mulgrave to Kellyville Construction Area No 1 – heavy vehicle route end of journey

- Staff access/egress at the Samantha Riley Drive Compound:
  - Average of 225 movements per day or 75 one-way movements per hour
  - Peak of 300 movements per day or 150 one-way movements per hour
  - Peak times to be avoided 8 am to 9 am and 5 pm to 7 pm.
- Clear and grub, temporary carpark, and site compound construction Ch: 41620 to 42631 within the Kellyville Construction Area No 1:
  - Average 600 tonnes/day or 33 truck movements per day or 6 truck movements per hour
  - Peak 1000 tonnes/day or 55 truck movements per day or 9 truck movements per hour
  - Total 20,000 tonnes of material movement
  - Total 1200 truck movements.
  - Peak times to be avoided 8 am to 9 am and 5 pm to 7 pm.

# Construction Traffic Management Plan

## Surface and Viaduct Civil Works



- Pier excavation works Ch: 41620 to 42631 within the Kellyville Construction Area No 1:
  - Average 600 tonnes/day or 33 truck movements per day or 6 truck movements per hour
  - Peak 1000 tonnes/day or 55 truck movements per day or 9 truck movements per hour
  - Total 4375 tonnes of material movement
  - Total 250 truck movements.
  - Peak times to be avoided 8 am to 9 am and 5 pm to 7 pm.
- Pile reinforcement deliveries works Ch: 41620 to 42631 within the Kellyville Construction Area No 1:
  - Average 100 tonnes/day or 6 truck movements per day or 1 truck movements per hour
  - Peak 120 tonnes/day or 7 truck movements per day or 1 truck movements per hour
  - Total 210 tonnes of material movement
  - Total 12 truck movements.
  - Peak times to be avoided 8 am to 9 am and 5 pm to 7 pm.
- Pile concrete placement works Ch: 41620 to 42631 within the Kellyville Construction Area No 1:
  - Average 250 m3/day or 50 truck movements per day or 9 truck movements per hour;
  - Peak 300 m3/day or 60 truck movements per day or 10 truck movements per hour;
  - Total 1400 m3 of concrete movement
  - Total 280 truck movements.
  - Peak times to be avoided 8 am to 9 am and 5 pm to 7 pm.
- Pier reinforcement deliveries works Ch: 41620 to 42631 within the Kellyville Construction Area No 1:
  - Average 100 tonnes/day or 6 truck movements per day or 1 truck movements per hour
  - Peak 120 tonnes/day or 7 truck movements per day or 1 truck movements per hour
  - Total 525 tonnes of material movement
  - Total 30 truck movements.
  - Peak times to be avoided 8 am to 9 am and 5 pm to 7 pm.
- Pier concrete placement works Ch: 41620 to 42631 within the Kellyville Construction Area No 1:
  - Average 250 m3/day or 50 truck movements per day or 9 truck movements per hour;
  - Peak 300 m3/day or 60 truck movements per day or 10 truck movements per hour;
  - Total 3,500 m3 of concrete movement
  - Total 700 truck movements.
  - Peak times to be avoided 8 am to 9 am and 5 pm to 7 pm.

The impact on the road network is the access/egress of the site workforce which has an impact of increasing the AADT of Samantha Riley Drive by 300 vehicle movements which amounts to an increase of 3% based on the traffic counts undertaken by Aurecon-Arup for the preparation of the EIS. While the overall AADT impact is insignificant the peak hour impact is an increase of 23% if the staff access/egress all within the same time period.

To overcome this, there is the need for some minor staggering of site arrival and departure times to minimise the impacts to the surrounding network. This is addressed in more detail in the CTMSP#12 Samantha Riley Drive Site Compound.

The actual construction works have an impact of increasing the AADT of Samantha Riley Drive by a 60 vehicle movements which amounts to an increase of <1% based on the traffic counts undertaken by Aurecon-Arup for the preparation of the EIS.

The following further plans are in-progress for this site as part of the CTMSP:

- Detailed plans for the individual worksite areas addressing legislative and contractual requirements, including, design of the Works Authorisation Deed Works package for the access/egress point and the interface with the T-Way carpark;
- Construction route haulage management plans;
- Internal/external haul road design package;
- Temporary works design package;
- Traffic staging plan packages;
- Road condition surveys; and
- Traffic counts and modelling results, where required.

#### 4.6 Kellyville Construction Area No 2

Kellyville Construction Area No 2 (Left-in, Left-out, access via Samantha Riley Drive off Old Windsor Road and Left-in, Left-out off North West T-Way for the other sections of works). Access arrangements and TCPs are contained in CTMSP for this zone.

Under existing traffic conditions the intersection at Old Windsor Road and Windsor Road has spare capacity and operates at a Level of Service C.

Site generated traffic will be limited and will not have a significant impact on the operation of the intersection.

The access to the Kellyville Construction Area 2 will be through a haul road adjacent to the T-Way.

The primary haulage route will be from the proposed concrete batching plant in Mulgrave and will run along Windsor Road to the worksite. This is shown following.

# Construction Traffic Management Plan

Surface and Viaduct Civil Works



Figure 9: Extract of Haulage Route Map – Mulgrave to Kellyville Construction Area No 2 – heavy vehicle route end of journey



# Construction Traffic Management Plan

## Surface and Viaduct Civil Works



Figure 10: Figure 10 – Samantha Riley Drive to Windsor Road – heavy vehicle route

- Clear and grub, and temporary access road Ch: 42631 to 43476 within the Kellyville Construction Area No 2:
  - Average 600 tonnes/day or 33 truck movements per day or 6 truck movements per hour
  - Peak 1000 tonnes/day or 55 truck movements per day or 9 truck movements per hour
  - Total 8,000-10,000 tonnes of material movement
  - Total 500-600 truck movements.
  - Peak times to be avoided 8 am to 9 am and 5 pm to 7 pm on Samantha Riley Drive, and 7 am to 8:30 am and 4:15 to 5:15 pm on Old Windsor Road.

# Construction Traffic Management Plan

## Surface and Viaduct Civil Works



- Pier excavation works Ch: 42631 to 43476 within the Kellyville Construction Area No 2:
  - Average 600 tonnes/day or 33 truck movements per day or 6 truck movements per hour
  - Peak 1000 tonnes/day or 55 truck movements per day or 9 truck movements per hour
  - Total 2,625 tonnes of material movement
  - Total 200 truck movements.
  - Peak times to be avoided 8 am to 9 am and 5 pm to 7 pm on Samantha Riley Drive, and 7 am to 8:30 am and 4:15 to 5:15 pm on Old Windsor Road.
- Pile reinforcement deliveries works Ch: 42631 to 43476 within the Kellyville Construction Area No 2:
  - Average 100 tonnes/day or 6 truck movements per day or 1 truck movements per hour
  - Peak 120 tonnes/day or 7 truck movements per day or 1 truck movements per hour
  - Total 130 tonnes of material movement
  - Total 8 truck movements.
  - Peak times to be avoided 8 am to 9 am and 5 pm to 7 pm on Samantha Riley Drive, and 7 am to 8:30 am and 4:15 to 5:15 pm on Old Windsor Road.
- Pile concrete placement works Ch: 42631 to 43476 within the Kellyville Construction Area No 2:
  - Average 250 m3/day or 50 truck movements per day or 9 truck movements per hour;
  - Peak 300 m3/day or 60 truck movements per day or 10 truck movements per hour ;
  - Total 840 m3 of concrete movement
  - Total 168 truck movements.
  - Peak times to be avoided 8 am to 9 am and 5 pm to 7 pm on Samantha Riley Drive, and 7 am to 8:30 am and 4:15 to 5:15 pm on Old Windsor Road.
- Pier reinforcement deliveries works Ch: 42631 to 43476 within the Kellyville Construction Area No 2:
  - Average 100 tonnes/day or 6 truck movements per day or 1 truck movements per hour
  - Peak 120 tonnes/day or 7 truck movements per day or 1 truck movements per hour
  - Total 315 tonnes of material movement
  - Total 18 truck movements.
  - Peak times to be avoided 8 am to 9 am and 5 pm to 7 pm on Samantha Riley Drive, and 7 am to 8:30 am and 4:15 to 5:15 pm on Old Windsor Road.

# Construction Traffic Management Plan

## Surface and Viaduct Civil Works



- Pier concrete placement works Ch: 42631 to 43476 within the Kellyville Construction Area No 2:
  - Average 250 m3/day or 50 truck movements per day or 9 truck movements per hour;
  - Peak 300 m3/day or 60 truck movements per day or 10 truck movements per hour ;
  - Total 2,100 m3 of concrete movement
  - Total 420 truck movements.
  - Peak times to be avoided 8 am to 9 am and 5 pm to 7 pm on Samantha Riley Drive, and 7 am to 8:30 am and 4:15 to 5:15 pm on Old Windsor Road.

The estimated vehicle movements per day are 60 vehicle movements. These 60 vehicle movements would predominantly enter at the Samantha Riley Drive access until this section of works is completed followed by the accesses on T-Way. These 60 vehicle movements per day leads to an increase of <1% based on the traffic counts undertaken by Aurecon-Arup for the preparation of the EIS for Samantha Riley Drive. The T-Way currently operates below capacity with fewer than 200 bus services in the AM and PM peak in both directions. The increase in traffic movements on the T-Way would not result in a deterioration in conditions for existing bus services.

The crossing of Windsor Road will be covered in a separate CTMSP. The work shall occur at night with half and full road closures.

### 4.7 Beaumont Hills Construction Area

Access to Beaumont Hills Construction Area would be Left-in - Left-out, on Windsor Road, Left in - Right out via T-Way and Right-in, Left-out off Sanctuary Drive). Access arrangements and TCPs are contained in CTMSP for this zone.

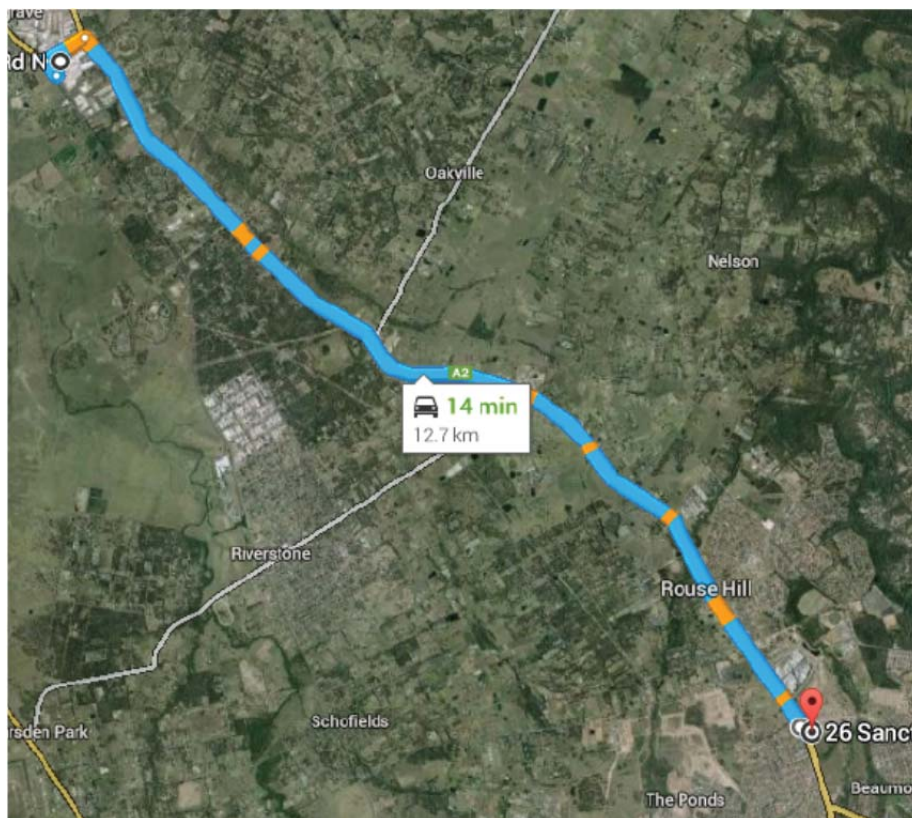


Figure 11: Extract of Haulage Route Map – Mulgrave to Beaumont Hills Construction Area – heavy vehicle route



# Construction Traffic Management Plan

## Surface and Viaduct Civil Works

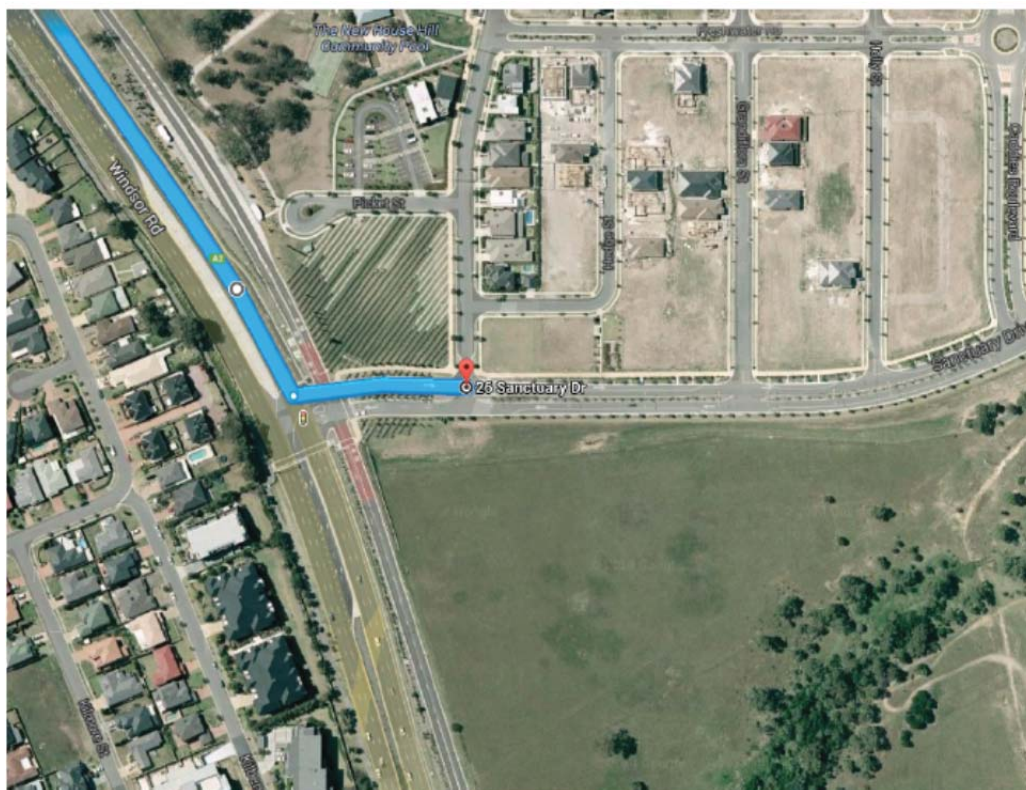


Figure 12: Extract of Haulage Route Map – Mulgrave to Beaumont Hills Construction Area – heavy vehicle route end of journey



# Construction Traffic Management Plan

## Surface and Viaduct Civil Works



- Clear and grub, and temporary access road Ch: 43476 to 44413 within the Beaumont Hills Construction Area:
  - Average 600 tonnes/day or 33 truck movements per day or 6 truck movements per hour
  - Peak 1000 tonnes/day or 55 truck movements per day or 9 truck movements per hour
  - Total 8,000-10,000 tonnes of material movement
  - Total 500-600 truck movements.
  - Peak times to be avoided 7:15 to 8:45 am and 5 pm to 6 pm on Windsor Road and 8 am to 9 am and 3pm to 6 pm on Sanctuary Drive
- Pier excavation works Ch: 43476 to 44413 within the Beaumont Hills Construction Area:
  - Average 600 tonnes/day or 33 truck movements per day or 6 truck movements per hour
  - Peak 1000 tonnes/day or 55 truck movements per day or 9 truck movements per hour
  - Total 2,625 tonnes of material movement
  - Total 150 truck movements.
  - Peak times to be avoided 7:15 to 8:45 am and 5 pm to 6 pm on Windsor Road and 8 am to 9 am and 3pm to 6 pm on Sanctuary Drive
- Pile reinforcement deliveries works Ch: 43476 to 44413 within the Beaumont Hills Construction Area:
  - Average 100 tonnes/day or 6 truck movements per day or 1 truck movements per hour
  - Peak 120 tonnes/day or 7 truck movements per day or 1 truck movements per hour
  - Total 130 tonnes of material movement
  - Total 8 truck movements.
  - Peak times to be avoided 7:15 to 8:45 am and 5 pm to 6 pm on Windsor Road and 8 am to 9 am and 3pm to 6 pm on Sanctuary Drive
- Pile concrete placement works Ch: 43476 to 44413 within the Beaumont Hills Construction Area:
  - Average 250 m3/day or 50 truck movements per day or 9 truck movements per hour;
  - Peak 300 m3/day or 60 truck movements per day or 10 truck movements per hour ;
  - Total 840 m3 of concrete movement
  - Total 170 truck movements.
  - Peak times to be avoided 7:15 to 8:45 am and 5 pm to 6 pm on Windsor Road and 8 am to 9 am and 3pm to 6 pm on Sanctuary Drive

- Pier reinforcement deliveries works Ch: 43476 to 44413 within the Beaumont Hills Construction Area:
  - Average 100 tonnes/day or 6 truck movements per day or 1 truck movements per hour
  - Peak 120 tonnes/day or 7 truck movements per day or 1 truck movements per hour
  - Total 350 tonnes of material movement
  - Total 20 truck movements.
  - Peak times to be avoided 7:15 to 8:45 am and 5 pm to 6 pm on Windsor Road and 8 am to 9 am and 3pm to 6 pm on Sanctuary Drive
- Pier concrete placement works Ch: 43476 to 44413 within the Beaumont Hills Construction Area:
  - Average 250 m3/day or 50 truck movements per day or 9 truck movements per hour;
  - Peak 300 m3/day or 60 truck movements per day or 10 truck movements per hour ;
  - Total 2,100 m3 of concrete movement
  - Total 420 truck movements.
  - Peak times to be avoided 7:15 to 8:45 am and 5 pm to 6 pm on Windsor Road and 8 am to 9 am and 3pm to 6 pm on Sanctuary Drive

The estimated vehicle movements per day are 60 vehicle movements. These 60 vehicle movements would enter via the Windsor Road, T-Way and the Sanctuary Drive access points during different stages of the construction of the project. These 60 vehicle movements per day leads to an increase of <1% based on the traffic counts undertaken by Aurecon-Arup for the preparation of the EIS for the Windsor Road network and 4% for the Sanctuary Drive road network.

The T-Way currently operates below capacity with fewer than 200 bus services in the AM and PM peak in both directions. The increase in traffic movements on the T-Way would not result in a deterioration in conditions for existing bus services.

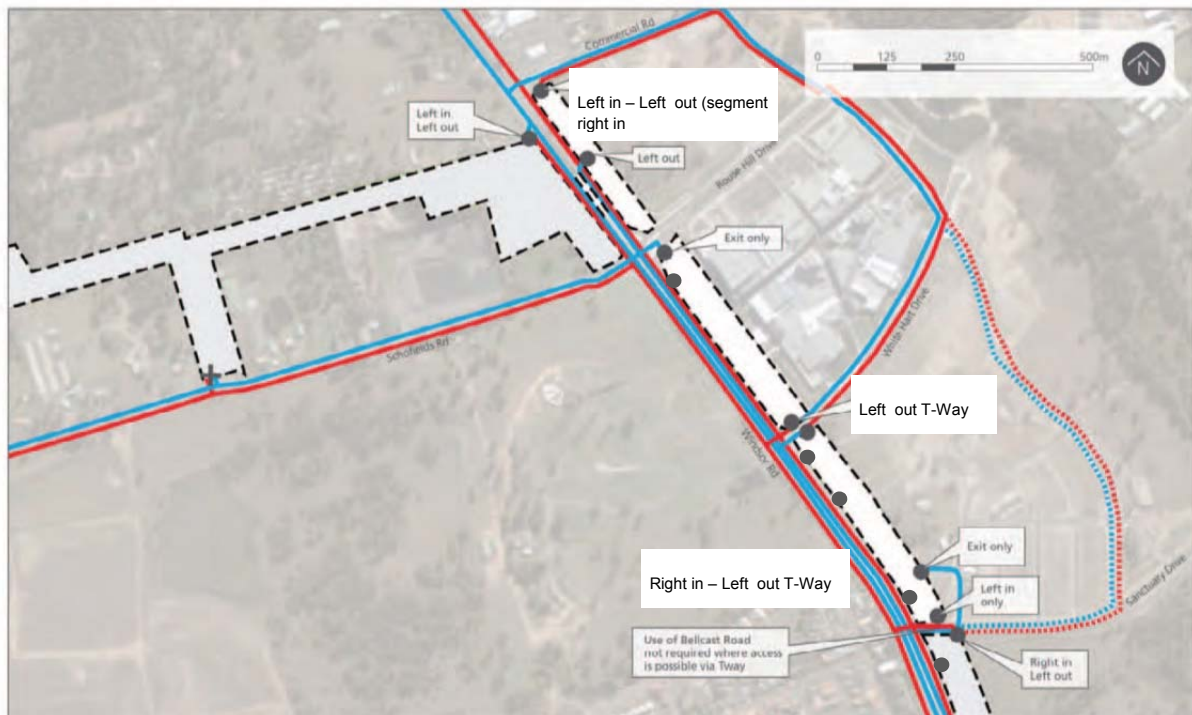
The crossing of Sanctuary Road will be covered in a separate CTMSP. The work shall occur at night with half and full road closures.

#### 4.8 Rouse Hill Construction Area No 2

The Rouse Hill Construction Area 2 is characterized by the presence of the Southern Bus Layover. Access to the haul road will be organised from the T-way.

# Construction Traffic Management Plan

## Surface and Viaduct Civil Works



Access arrangements and TCPs are contained in CTMSP for this zone. Indicative traffic volumes are shown below.

- Clear and grub, and temporary access road Ch: 44413 to 44848 within the Rouse Hill Construction Area No 2:
  - Average 600 tonnes/day or 33 truck movements per day or 6 truck movements per hour
  - Peak 1000 tonnes/day or 55 truck movements per day or 9 truck movements per hour
  - Total 5,000-6,000 tonnes of material movement
  - Total 250-350 truck movements.
  - Peak times to be avoided 11am to 1 pm and 5 pm to 6 pm on White Hart Drive and 8 am to 9 am and 3pm to 6 pm on Sanctuary Drive
- Pier excavation works Ch: 44413 to 44848 within the Rouse Hill Construction Area No 2:
  - Average 600 tonnes/day or 33 truck movements per day or 6 truck movements per hour
  - Peak 1000 tonnes/day or 55 truck movements per day or 9 truck movements per hour
  - Total 1,375 tonnes of material movement
  - Total 80 truck movements.
  - Peak times to be avoided 11am to 1 pm and 5 pm to 6 pm on White Hart Drive and 8 am to 9 am and 3pm to 6 pm on Sanctuary Drive
- Pile reinforcement deliveries works Ch: 44413 to 44848 within the Rouse Hill Construction Area No 2:
  - Average 100 tonnes/day or 6 truck movements per day or 1 truck movements per hour



- Peak 120 tonnes/day or 7 truck movements per day or 1 truck movements per hour
  - Total 70 tonnes of material movement
  - Total 5 truck movements.
  - Peak times to be avoided 11am to 1 pm and 5 pm to 6 pm on White Hart Drive and 8 am to 9 am and 3pm to 6 pm on Sanctuary Drive
- Pile concrete placement works Ch: 44413 to 44848 within the Rouse Hill Construction Area No 2:
  - Average 250 m3/day or 50 truck movements per day or 9 truck movements per hour;
  - Peak 300 m3/day or 60 truck movements per day or 10 truck movements per hour ;
  - Total 440 m3 of concrete movement
  - Total 88 truck movements.
  - Peak times to be avoided 11am to 1 pm and 5 pm to 6 pm on White Hart Drive and 8 am to 9 am and 3pm to 6 pm on Sanctuary Drive
- Pier reinforcement deliveries works Ch: 44413 to 44848 within the Rouse Hill Construction Area No 2:
  - Average 100 tonnes/day or 6 truck movements per day or 1 truck movements per hour
  - Peak 120 tonnes/day or 7 truck movements per day or 1 truck movements per hour
  - Total 170 tonnes of material movement
  - Total 10 truck movements.
  - Peak times to be avoided 11am to 1 pm and 5 pm to 6 pm on White Hart Drive and 8 am to 9 am and 3pm to 6 pm on Sanctuary Drive
- Pier concrete placement works Ch: 44413 to 44848 within the Rouse Hill Construction Area No 2:
  - Average 250 m3/day or 50 truck movements per day or 9 truck movements per hour;
  - Peak 300 m3/day or 60 truck movements per day or 10 truck movements per hour ;
  - Total 1,100 m3 of concrete movement
  - Total 220 truck movements.
  - Peak times to be avoided 11am to 1 pm and 5 pm to 6 pm on White Hart Drive and 8 am to 9 am and 3pm to 6 pm on Sanctuary Drive

The estimated vehicle movements per day are 60 vehicle movements. These 60 vehicle movements per day leads to an increase of 2-4% based on the traffic counts undertaken by Aurecon-Arup for the preparation of the EIS road network.

### 4.9 Rouse Hill Construction Area No 1

The Rouse Hill Station construction site will occupy the existing bus interchange, which is the northern terminus of the North West Transit way. Access to the construction site will operate as a one way configuration with the entry from Windsor Road via T-way entry road to the bus interchange, with an



# Construction Traffic Management Plan

## Surface and Viaduct Civil Works



exit back onto T-Way. Details of the vehicle movements and traffic management are included in the CTMSP for this area.

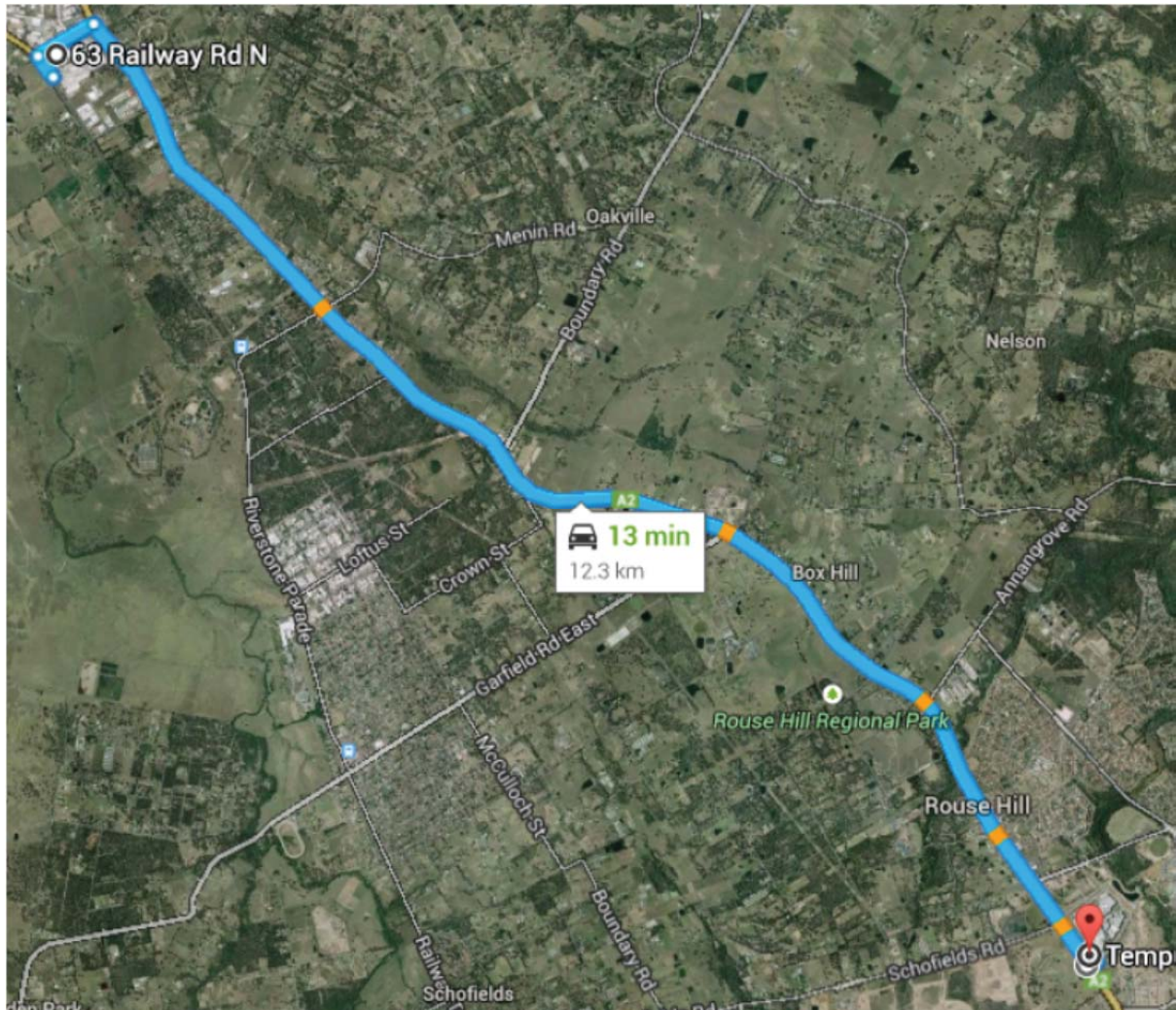


Figure 13: Extract of Haulage Route Map – Mulgrave to Rouse Hill Construction Area – heavy vehicle route

Indicative traffic volumes are detailed below.

- Clear and grub, and temporary access road Ch: 44848 to 45283 within the Rouse Hill Construction Area No 1:
  - Average 300 tonnes/day or 17 truck movements per day or 3 truck movements per hour
  - Peak 500 tonnes/day or 30 truck movements per day or 5 truck movements per hour
  - Total 500-1,000 tonnes of material movement
  - Total 30-60 truck movements.
  - Peak times to be avoided 11am to 1 pm and 5 pm to 6 pm on White Hart Drive and 11am to 1 pm on Rouse Hill Drive

# Construction Traffic Management Plan

## Surface and Viaduct Civil Works



- Pier excavation works Ch: 44848 to 45283 within the Rouse Hill Construction Area No 1:
  - Average 300 tonnes/day or 17 truck movements per day or 3 truck movements per hour
  - Peak 500 tonnes/day or 30 truck movements per day or 5 truck movements per hour
  - Total 1750 tonnes of material movement
  - Total 100 truck movements.
  - Peak times to be avoided 11am to 1 pm and 5 pm to 6 pm on White Hart Drive and 11am to 1 pm on Rouse Hill Drive
- Pile reinforcement deliveries works Ch: 44848 to 45283 within the Rouse Hill Construction Area No 1:
  - Average 100 tonnes/day or 6 truck movements per day or 1 truck movements per hour
  - Peak 120 tonnes/day or 7 truck movements per day or 1 truck movements per hour
  - Total 85 tonnes of material movement
  - Total 6 truck movements.
  - Peak times to be avoided 11am to 1 pm and 5 pm to 6 pm on White Hart Drive and 11am to 1 pm on Rouse Hill Drive
- Pile concrete placement works Ch: 44848 to 45283 within the Rouse Hill Construction Area No 1:
  - Average 125 m3/day or 25 truck movements per day or 5 truck movements per hour;
  - Peak 150 m3/day or 30 truck movements per day or 6 truck movements per hour ;
  - Total 560 m3 of concrete movement
  - Total 112 truck movements.
  - Peak times to be avoided 11am to 1 pm and 5 pm to 6 pm on White Hart Drive and 11am to 1 pm on Rouse Hill Drive
- Pier reinforcement deliveries works Ch: 44848 to 45283 within the Rouse Hill Construction Area No 1:
  - Average 100 tonnes/day or 6 truck movements per day or 1 truck movements per hour
  - Peak 120 tonnes/day or 7 truck movements per day or 1 truck movements per hour
  - Total 210 tonnes of material movement
  - Total 12 truck movements.
  - Peak times to be avoided 11am to 1 pm and 5 pm to 6 pm on White Hart Drive and 11am to 1 pm on Rouse Hill Drive

- Pier concrete placement works Ch: 44848 to 45283 within the Rouse Hill Construction Area No 1:
  - Average 125 m<sup>3</sup>/day or 25 truck movements per day or 5 truck movements per hour;
  - Peak 150 m<sup>3</sup>/day or 30 truck movements per day or 6 truck movements per hour ;
  - Total 1,400 m<sup>3</sup> of concrete movement
  - Total 280 truck movements.

The estimated vehicle movements per day are 30 vehicle movements. These 30 vehicle movements per day leads to an increase of <1% based on the traffic counts undertaken by Aurecon-Arup for the preparation of the EIS for both the Rouse Hill Drive road network and the White Hart Drive road network.

The crossing of Rouse Hill Drive will be covered in a separate CTMSP. The work shall occur at night with half and full road closures.

### 4.10 Windsor Road Construction Area 1 and 2 and Second Ponds Creek Construction Areas

Windsor Road Construction Area 1 and 2, and Second Ponds Creek Construction Areas (Left-in, Right-out access via Commercial Road, Left-in, Left-out access via Windsor Road, and Right-in, Left-out, Right-out at Schofields Road).

#### 4.10.1 Second Ponds Creek Construction Area (Cut 2 – access via Schofields Road)

The primary access/egress for this area will be off Schofields Road in accordance with the WAD and EIS requirements.

Indicative traffic volumes are detailed below.

Cutting east of Tallawong Station Ch: 45600 to 46800 within the Second Ponds Creek Construction Area:

- Average 600 tonnes/day or 33 truck movements per day or 6 truck movements per hour
- Peak 1000 tonnes/day or 55 truck movements per day or 9 truck movements per hour
- Total 50,000 tonnes of material movement
- Total 2,800 truck movements.
- Peak times to be avoided 9am to 10 am and 5 pm to 6 pm

These works thence have an impact of increasing the AADT of Schofields Road by 33 vehicle movements which amounts to an increase of <1% based on the traffic counts undertaken by Aurecon-Arup for the preparation of the EIS. These activities are scheduled to begin early in the programmed delivery of the works. This increase of <1% will be for a duration of three (3) months.



# Construction Traffic Management Plan

## Surface and Viaduct Civil Works

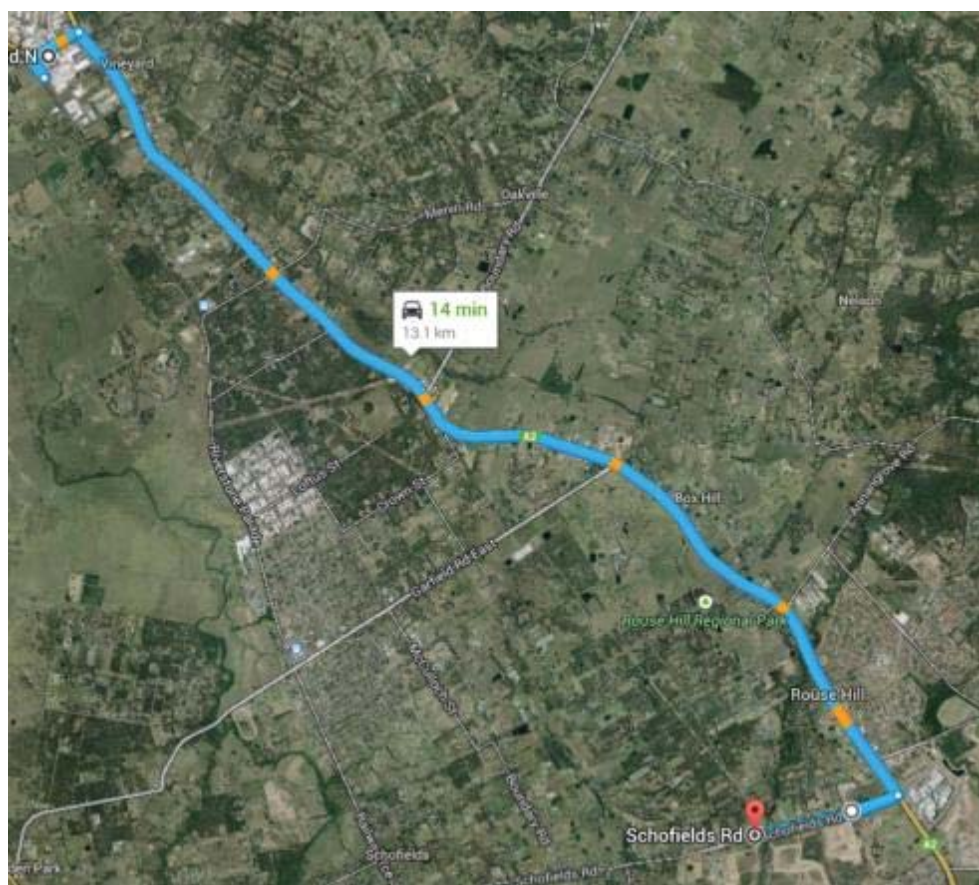


Figure 14: Extract of Haulage Route Map – Second Ponds Creek Construction Area – heavy vehicle route

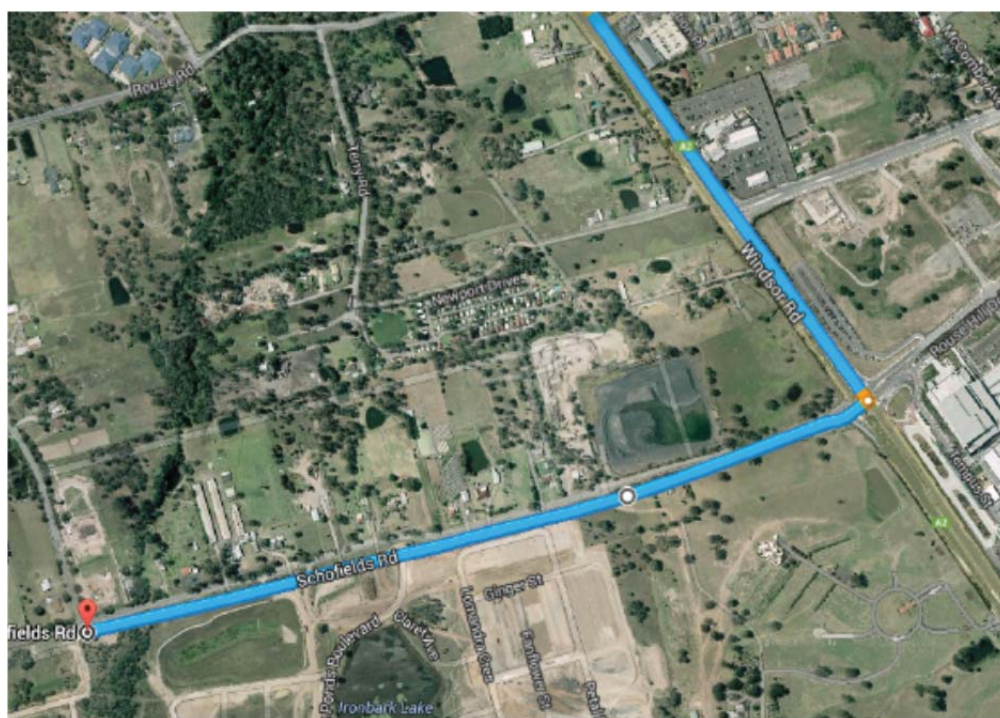
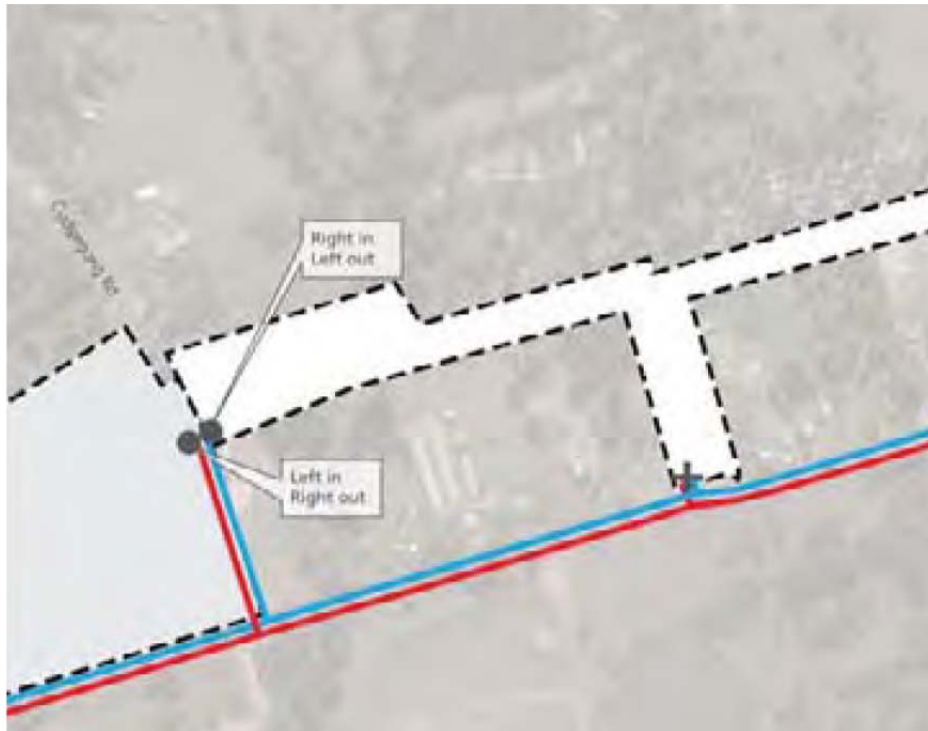


Figure 15: Extract of Haulage Route Map – Second Ponds Creek Construction Area – heavy vehicle route end of Journey

# Construction Traffic Management Plan

## Surface and Viaduct Civil Works



Indicative traffic volumes are detailed below.

- Clear and grub, and temporary access road Ch: 45283 to End of Project within the Windsor Road Construction Area 1, 2, and Second Ponds Creek Construction Areas:
  - Average 600 tonnes/day or 33 truck movements per day or 6 truck movements per hour
  - Peak 1000 tonnes/day or 60 truck movements per day or 10 truck movements per hour
  - Total 6,000-10,000 tonnes of material movement
  - Total 350-600 truck movements.
  - Peak times to be avoided 9am to 10 am (eastbound) and 11-12 am (West bound) and 5 pm to 7 pm on Schofields Road.
- Pier excavation works Ch: 45283 to End of Project within the Windsor Road Construction Area 1, 2, and Second Ponds Creek Construction Areas:
  - Average 600 tonnes/day or 33 truck movements per day or 6 truck movements per hour
  - Peak 1000 tonnes/day or 60 truck movements per day or 10 truck movements per hour
  - Total 2,250 tonnes of material movement
  - Total 125 truck movements.
  - Peak times to be avoided 9am to 10 am (eastbound) and 11-12 am (West bound) and 5 pm to 7 pm on Schofields Road.

# Construction Traffic Management Plan

## Surface and Viaduct Civil Works



- Pile reinforcement deliveries works Ch: 45283 to End of Project within the Windsor Road Construction Area 1, 2, and Second Ponds Creek Construction Areas:
  - Average 100 tonnes/day or 6 truck movements per day or 1 truck movements per hour
  - Peak 120 tonnes/day or 7 truck movements per day or 1 truck movements per hour
  - Total 120 tonnes of material movement
  - Total 7 truck movements.
  - Peak times to be avoided 9am to 10 am (eastbound) and 11-12 am (West bound) and 5 pm to 7 pm on Schofields Road.
- Pile concrete placement works Ch: 45283 to End of Project within the Windsor Road Construction Area 1, 2, and Second Ponds Creek Construction Areas:
  - Average 250 m3/day or 50 truck movements per day or 9 truck movements per hour;
  - Peak 300 m3/day or 60 truck movements per day or 10 truck movements per hour ;
  - Total 720 m3 of concrete movement
  - Total 144 truck movements.
  - Peak times to be avoided 9am to 10 am (Eastbound) and 11-12 am (West bound) and 5 pm to 7 pm on Schofields Road.
- Pier reinforcement deliveries works Ch: 45283 to End of Project within the Windsor Road Construction Area 1, 2, and Second Ponds Creek Construction Areas:
  - Average 100 tonnes/day or 6 truck movements per day or 1 truck movements per hour
  - Peak 120 tonnes/day or 7 truck movements per day or 1 truck movements per hour
  - Total 270 tonnes of material movement
  - Total 15 truck movements.
  - Peak times to be avoided 9am to 10 am (eastbound) and 11-12 am (West bound) and 5 pm to 7 pm on Schofields Road.
- Pier concrete placement works Ch: 45283 to End of Project within the Windsor Road Construction Area 1, 2, and Second Ponds Creek Construction Areas:
  - Average 250 m3/day or 50 truck movements per day or 9 truck movements per hour;
  - Peak 300 m3/day or 60 truck movements per day or 10 truck movements per hour ;
  - Total 1,800 m3 of concrete movement
  - Total 360 truck movements.
  - Peak times to be avoided 9am to 10 am (eastbound) and 11-12 am (West bound) and 5 pm to 7 pm on Schofields Road.

The estimated vehicle movements per day are 60 vehicle movements. These 60 vehicle movements per day leads to an increase of 1% based on the traffic counts undertaken by Aurecon-Arup for the preparation of the EIS for the Schofields Road network.



### 4.10.2 Windsor Road Diversion Works and Crossing: Indicative Staging

A detailed CTMSP will be developed as required by the new condition E35 in Modification of 20 May 2014 to Project Approval SSI-5154, consultation with Blacktown City Council and the Rouse Hill Town Centre on impacts associated with the construction of the Windsor Road Bridge is required as part of this detailed sub plan.

The construction of the bridge crossing requires the use of five (5) temporary supports to provide support to the launching girder during the erection of the bridge segments. One temporary support is required under each of the end spans of the Three (3) span bridge and three (3) temporary supports are required under the central span.

Some of the key solutions relating to the temporary works are described below:-

- All temporary works located will be designed for vehicular collision in accordance with the requirements described in AS5100.
- Safety barriers will be required between traffic lanes and temporary supports to protect vehicle occupants in the event of a vehicular collision with the supports
- Temporary support T4 which is located approximately 16.0 metres from the permanent support P112 at the Rouse Hill end of the bridge infringes on the turning lane from Windsor Road to Rouse Hill Drive and requires it to be shortened by approximately 20 metres temporarily which has been reviewed and accepted by RMS. The CTMSP details the TCPs, road closure durations and detours, etc.

### 4.11 Vehicle Movement Plan (VMP) and Haulage

Vehicle movement plans will be developed for the haulage operations applicable to each of the major sites. Please refer to the VMPs included in the CTMSP. These will include route plans, traffic movement plans, traffic control plans (where applicable) and further develop the information summarised in following. All trucks would enter and exit the worksites in a forward direction, where feasible and reasonable.

#### 4.11.1 Haulage Routes

The haulage routes for the project will be further developed as part of the Vehicle Movement Plans (VMP) contained in CTMSPs, viz:

- Bella Vista Station and Balmoral Road heavy vehicle routes. Access via Old Windsor Road, Memorial Avenue, Balmoral Road and Celebration Drive: estimated of 20 vehicle movements per hour during normal working hours avoiding the peak hours of 0900 and 1500 where possible;
- Memorial Construction Area heavy vehicle routes. Access via Old Windsor Road, Balmoral Road and Memorial Avenue: estimated of 20 vehicle movements per hour during normal working hours avoiding the peak hours of 0900 and 1500 where possible;
- Kellyville Construction Area 1: heavy vehicle routes and Figure 9.17 Kellyville Station heavy vehicle routes. Access via Samantha Riley Drive: estimated of 20 vehicle movements per hour during normal working hours avoiding the peak hours of 0900 and 1500 where possible;
- Kellyville Construction Area 2 heavy vehicle routes. Access via T-Way and Samantha Riley Drive. Estimated of 20 vehicle movements per hour during normal working hours avoiding the peak hours of 0900 and 1500 where ;
- Beaumont Hills Construction Area heavy vehicle routes. Access via T-Way and Sanctuary Drive: estimated of 20 vehicle movements per hour during normal working hours avoiding the peak hours of 0900 and 1500 where possible;

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- Rouse Hill Construction Area 2 heavy vehicle routes. Access via T-Way and Picket Place: estimated of 20 vehicle movements per hour during normal working hours avoiding the peak hours of 0900 and 1500 where possible;
- Rouse Hill Construction Area 1 heavy vehicle routes with route access via Windsor Road and egress via White Hart Drive: estimated of 20 vehicle movements per hour during normal working hours avoiding the peak hours of 0900 and 1500 where possible;
- Windsor Road Construction Area 1 & 2 heavy vehicle routes. Access routes via Windsor Road, Commercial Road and Schofields Road: estimated of 20 vehicle movements per hour during normal working hours avoiding the peak hours of 0900 and 1500 where possible.
- Pre-cast and oversize deliveries to all sites via Old Windsor Road / Windsor Road and each of the abovementioned access/egress points would be restricted to night time works due to road authority restrictions. These deliveries would have an estimated 15 vehicle movements per night.

Where schools occur in the immediate vicinity of the construction sites, heavy vehicle movements would be minimised (where reasonable and feasible), between 8:00-9:30 am and 2:30-4:00 pm Monday to Friday (on school days).

### 4.11.2 SVC Works Estimates of Haulage Movements

The Haulage movements are summarised per location in the below tables, Table 4-2 and Table 4-3.

Table 4-4: Estimated No. of Haulage Movements per day (based on delivery averages)

	Memorial Con. Area	Kellyville Con. Area No. 1	Kellyville Con. Area No. 2	Beaumont Hills Con. Area	Rouse Hill Con. Area No. 2	Rouse Hill Con. Area No. 1	SPC Con. Area (Cut 2)	Windsor Rd Con. Area No. 1 & 2, & SPC Con. Areas
Clear and grub, and access road construction	33	33	33	33	33	17		33
Cutting Excavation Works							33	
Pier excavation works	33	33	33	33	33	17		33
Pile reinforcement deliveries	6	6	6	6	6	6		6
Pile concrete placement	50	50	50	50	50	25		50
Pier reinforcement deliveries	6	6	6	6	6	6		6
Pier concrete placement	50	50	50	50	50	25		50



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Table 4-5: Estimated Total No. of Haulage Movements ( based on quantities)

	Memorial Con. Area	Kellyville Con. Area No. 1	Kellyville Con. Area No. 2	Beaumont Hills Con. Area	Rouse Hill Con. Area No. 2	Rouse Hill Con. Area No. 1	SPC Con. Area (Cut 2)	Windsor Rd Con. Area No. 1 & 2, & SPC Con. Areas
Clear and grub, and access road construction	25-55	1200	500-600	250-350	250-350	30-60		350-600
Cutting Excavation Works							2800	
Pier excavation works	100	250	200	80	80	100		125
Pile reinforcement deliveries	9	12	8	5	5	6		7
Pile concrete placement	80	280	168	88	88	112		144
Pier reinforcement deliveries	9	30	18	10	10	12		15
Pier concrete placement	200	700	420	220	220	280		360

## 4.12 Access Control and Restrictions

The hours of operation for the movement of construction vehicles will be in accordance with the approved operating hours as required by the Deed and in accordance with the environmental approvals, SWTC, and the RMS TMC.

To provide a safe entry and exit to the work site from safe access points or gates ISJV will:

- Utilise controlled access gates during construction hours
- Where there is no practical alternative, utilise existing local road to access construction work areas, e.g. Balmoral Road
- Keep the number of access points to a minimum in accordance with the approved access/egress points
- Ensure the new construction access points be designed to minimise impacts, so far as practicable, on any existing intersections, traffic facilities or traffic generating developments and are reviewed by the road authority (RMS or Council)
- Only install access points that are clearly visible, and have adequate sight distance
- Design junctions and access points in accordance with AUSTROADS Part 5 – Intersections at Grade and the RMS Road Design Guide and if/where required relevant standards, guides or manuals
- Ensure the junction configuration has sufficient capacity to accommodate the traffic generated by the construction site

- The access is designed to accommodate the turning movements of the largest vehicles that will be accessing the site.
- Ensure maintenance of property access and services for others as required.

### 4.13 Temporary and Permanent Detours

There will be temporary detours in the following locations as part of the project delivery which will be developed as part of the CTMSP for the project:

- Balmoral Road re-alignment (temporary road closure);
- T-Way temporary bus diversion (temporary diversion);
- T-Way closure for tie-ins (short term closure);
- Temporary Samantha Riley T-Way carpark;
- Tempus Street works (short term closures)
- Temporary lane closures for works adjacent roads (short term closures)..

Short term detours for works over roads are detailed in CTMSPs for viaduct road crossings (Memorial Avenue, T-Way, Samantha Riley Drive, Windsor Road, Sanctuary Drive, White Hart Drive and Rouse Hill Drive) and the bridge crossing of Windsor Road.

### 4.14 Traffic Noise Impacts, Sensitive Receivers, and Times of the Day

Works will be restricted to the approved working hours with regards to the bulk of the traffic movements with the exception of oversized vehicle deliveries which will have an estimated 15 x deliveries per night over a 6 hour effective shift.

Out of hours requests will be needed for essential work where a road occupancy licence cannot be obtained during the daytime. This includes the road crossings.

Out of hours noise protocols will be implemented and these impacts will be alleviated through careful management through the utilization of methods included in the Construction Noise and Vibration Management Plan.

### 4.15 Traffic Generation from Other Major Infrastructure Developments

The primary infrastructure development occurring within the vicinity of the SVC works is the TSC project being delivered by TJHD. Vehicle movements indicated by TJHD in their CTMP are as follows:

- Bella Vista Construction Site proposed TJHD pre-cast area: 304 vehicle movements per day in each direction between April 2014 and Jan 2016;
- Bella Vista Construction Site: 610 vehicle movements per day in each direction between Feb 2014 and Jun 2015

The SVC works are staged in separable portions so as to ramp up and down taking the TSC works into consideration. The primary interface at the Balmoral Road area is being managed through the SVC works in this area not being undertaken until after this area has been handed over to SVC by the TSC contractor. The interface at the proposed Bella Vista construction site compound is being minimized through the proposed SVC utilisation of an offsite batching and precast facility.

Interfaces with other major construction projects will be undertaken through the consultative process described for the Transport and Traffic Liaison Group. Other major construction projects include:

- Epping to Thornleigh Third Track;
- Schofields Road upgrade.

The impacts of these are being assessed throughout the monthly planning sessions with the Authorities.

### 4.16 Delivery Traffic Impacts

The primary construction traffic impacts by activity and site with respect to delivery have been listed in the following section. All hourly or daily truck movements have been based on works occurring outside of the peak hour traffic flows, i.e., night time works due to oversized deliveries.

#### 4.16.1 Precast Member Deliveries (All Worksites)

The precast member deliveries are as per Section 3.1.3 and will be delivered to all of the sites worksites indicated in Section 5.1 progressively. The 998 deliveries will utilise the Mulgrave to the Worksite haulage route along Old Windsor Road and Windsor Road. These deliveries are intended to start in December 2014.

The load per axle is anticipated to be 16 tonnes.

The vehicle movement will be accompanied by two (2) x escorts. One (1) front and one (1) rear.

A Heavy Haulage Transport Management Plan will be prepared by the haulage contractor in accordance with RMS requirements for heavy haulage.

As these deliveries are occurring outside of peak traffic flow times there will be no interference with public transport or other operations.

The TSC contract currently proposes to have deliveries for the tunnelling operations through July and August 2014 thence the December SVC deliveries will not interfere.

#### 4.16.2 Memorial Avenue Construction Area

Memorial Avenue Construction Area (Balmoral Road, Burns T-Way carpark entrance off Old Windsor Road and Old Windsor Road).

The following will be required to be delivered to the Southern Worksite so that works can begin:

- Earth moving equipment (excavators, dozers)
- Piling Rig
- Cranes
- Launching Gantry

These deliveries will be outside peak traffic flow times due to the larger vehicles required to carry these items, however, there should be a limited need for traffic control intervention with regards to these deliveries as they will be occurring on standard prime movers with loading/unloading occurring within the worksites.

#### 4.16.3 Windsor Road Construction Area 1 and 2, and Second Ponds Creek Construction Areas

Windsor Road Construction Area 1 and 2, and Second Ponds Creek Construction Areas (Left-in, Right-out access via Commercial Drive, Left-in, Left-out access via Windsor Road, and Left-in, Right-in, Left-out, Right-out via Schofields Road)

The following will be required to be delivered to the Northern Worksite so that works can begin:

- Earth moving equipment (excavators, dozers)
- Piling Rig
- Cranes

- Launching Gantry

These deliveries will be outside peak traffic flow times due to the larger vehicles required to carry these items, however, there should be a limited need for traffic control intervention with regards to these deliveries as they will be occurring on standard prime movers with loading/unloading occurring within the worksites.

#### 4.16.4 Scaffolding and Underslung Gantry

The following will required to be delivered to Zone 2, 4, 5, 6 and 7 for the scaffolding and underslung gantry:

- Cranes
- Underslung Gantry
- Scaffolding equipment

#### 4.16.5 These deliveries will be outside peak traffic flow times due to the larger vehicles required to carry these items, however, there should be a limited need for traffic control intervention with regards to these deliveries as they will be occurring on standard prime movers with loading/unloading occurring within the worksites. Floats Between Sites

There will be the need for floating heavy equipment between the worksites which will occur generally out of hours due to transportation restrictions:

- Earth moving equipment (excavators, dozers)
- Associated plant and equipment
- Piling Rig
- Cranes

These deliveries will be outside peak traffic flow times due to the larger vehicles required to carry these items, however, there should be a limited need for traffic control intervention with regards to these deliveries as they will be occurring on standard prime movers with loading/unloading occurring within the worksites.

The launching and underslung gantry once established will be able to walk itself between sites under controlled conditions. The scaffolding would be transported between zones.

### 4.17 Road Condition Surveys

The increase in traffic due to the constructions works of the ISJV SVC project is generally less than 5% in all road networks, notwithstanding, a 5% increase has the capacity to degrade the existing road thence to minimise the impacts a pre and post road condition will be undertaken to ensure that no degradation has resulted due to the ISJV usage of the road networks.

Road condition surveys are to be undertaken on:

- Council roads utilised for haulage operations, viz: unnamed road off Windsor Road for access to Beaumont Hills Construction Area; Sanctuary Drive, White Hart Drive, and Rouse Hill Drive; and
- in the following locations as identified by RMS:

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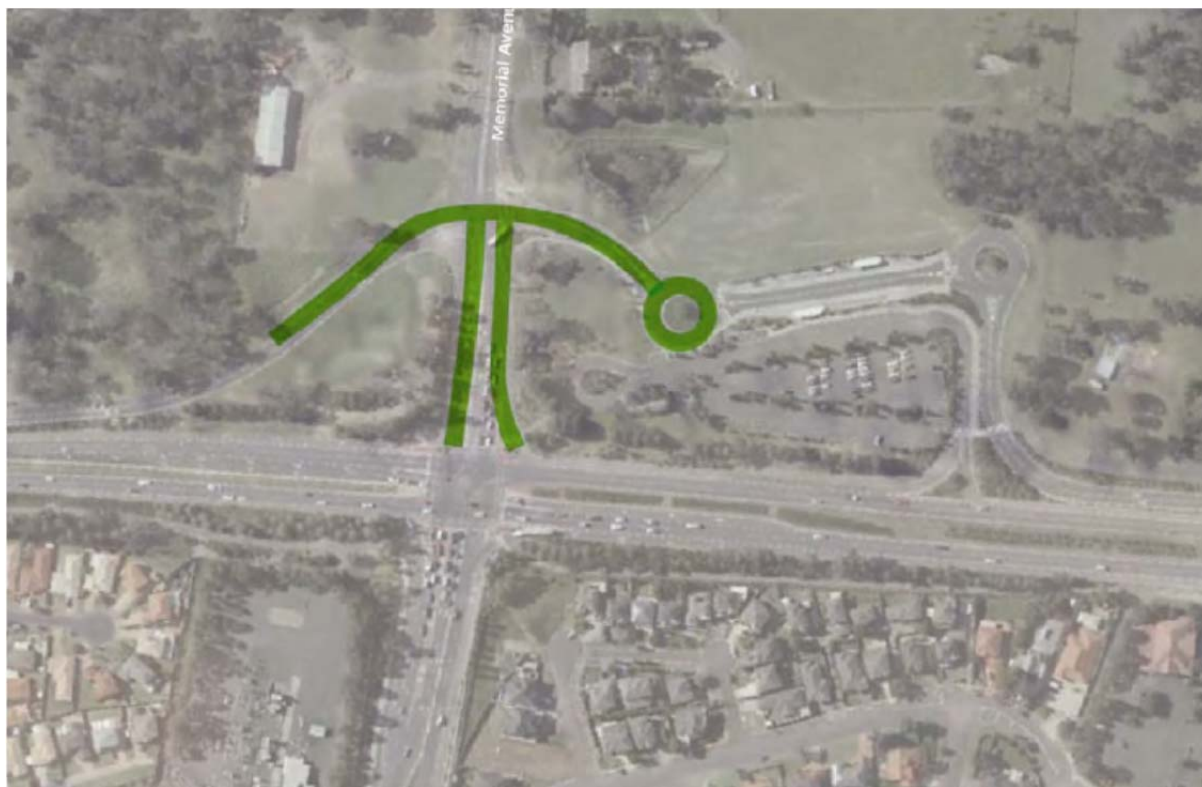
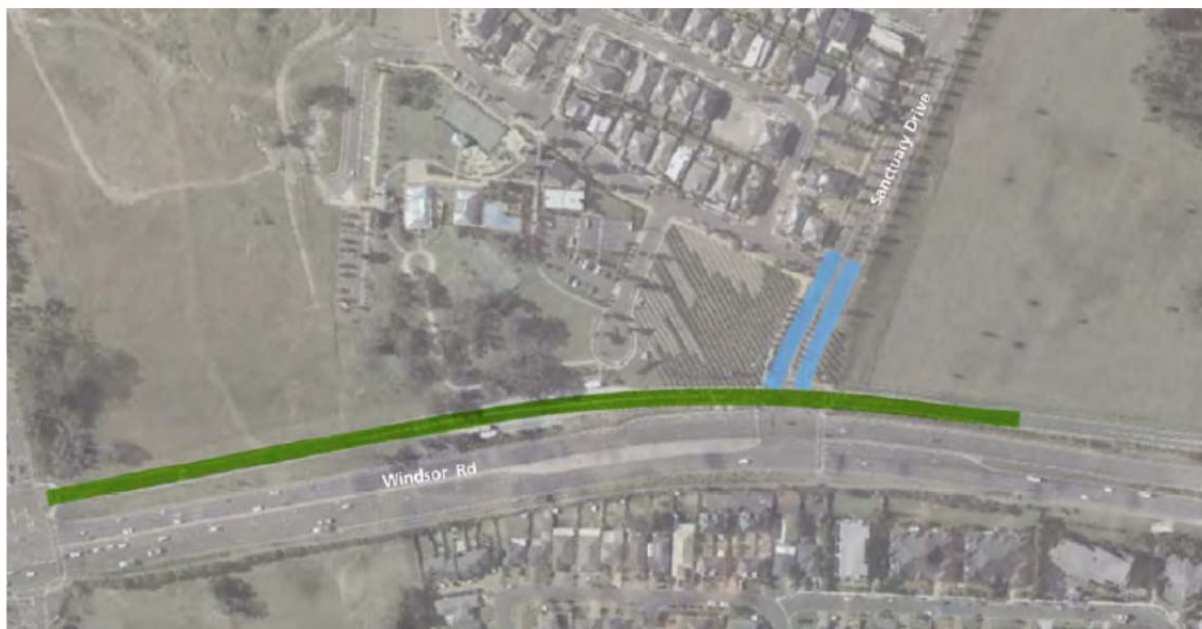


Figure 16: Memorial Drive: Extract of RMS nominated Road Condition Survey Area





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Figure 17: White Hart Lane: Extract of RMS nominated Road Condition Survey Area



Figure 18: Old Windsor Road: Extract of RMS nominated Road Condition Survey Area

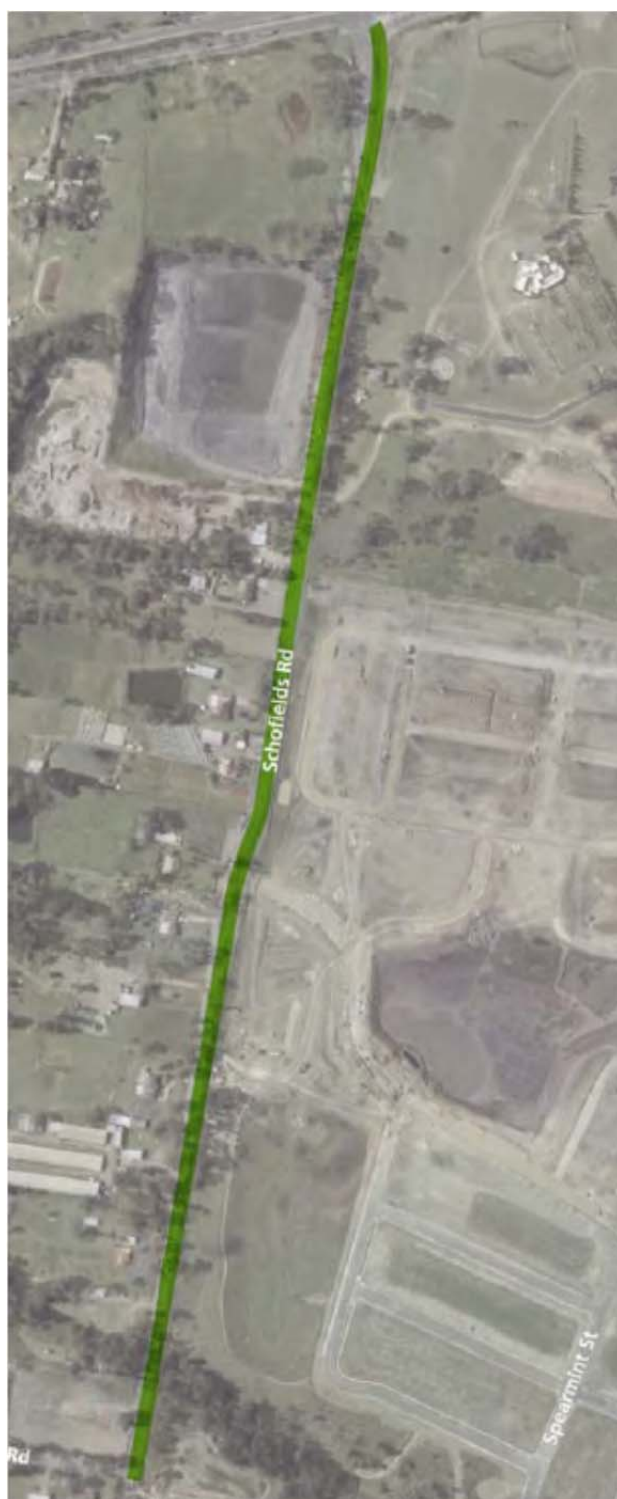


Figure 19: Schofields Road: Extract of RMS nominated Road Condition Survey Area

### 4.18 Management, Mitigation and Restorative Measures

The route management, mitigation and restorative measures are planned to be undertaken as follows:

- Traffic counts and modelling, where required
- Site investigation and dilapidation survey, where required

- Temporary works design, where required
- Traffic Control Plans, where required
- Incorporation into the VMP for distribution to stakeholders, including: TfNSW; RMS; Council, and the wider TTLG forum;
- Road opening permits (ROP) from Council, where required due to any proposed excavation works;
- Road occupancy licenses (ROL) from TMC, where required due to any proposed traffic impacts;
- Preparation of the delivery pack for distribution to the Construction Team
- Daily inspections, audits, and other delivery matters in accordance with the ISJV MSP22L Traffic Risk Management Procedure V1R1;
- Feedback, reporting, and continual improvement in accordance with the ISJV MSP22L Traffic Risk Management Procedure V1R1 and the SWTC;
- Finalization of works in accordance with the Vehicle Movement Plans, temporary or permanent works design plans, quality specifications, pre-handover safety audits, pre-handover dilapidation surveys, and post-completion road safety audits.

### 4.19 Parking Management Plan (PaMP)

#### 4.19.1 Parking Requirements

The parking requirements for the site are to be provided in the following key areas:

- Samantha Riley Drive Site Compound – off-street parking is proposed to cater for 150 people in this location.
- Designated lot off Schofields Road Compound – off-street parking to cater for up to 20 people in this location.
- Existing offsite batching plant – offsite parking to cater for up to 20 people in this location
- Balmoral Satellite Compound – off-street parking is proposed to cater for up to 10 people in this location within the worksite.
- Sanctuary Drive Satellite Compound – off-street parking is proposed to cater for up to 10 people in this location within the worksite.
- Commercial Road Satellite Compound – off-street parking is proposed to cater for up to 10 people in this location within the worksite.
- Tempus Street Satellite Compound - off-street parking is proposed to cater for up to 50 people in this location within the worksite.

These allocated construction parking allowances cater for the anticipated full workforce.

#### 4.19.2 Primary Compensatory Public Parking Management Plan

Samantha Riley T-Way Carpark currently caters for 141 persons (inclusive of 6 disabled).

Rouse Hill Town Centre has 76 displaced spaces due to the ISJV works.

Burns T-Way Carpark studies show that it requires a minimum of 100 spaces

#### 4.19.3 Remote Parking Arrangements, Public Transport Nodes, and Sustainable Transport

Public transport is to be encouraged through the utilization of the existing T-Way services. Remote parking areas are limited to the offsite batching facility in Mulgrave. Worker parking arrangements are



as per those previously stated. Targeted supervisor pick-up/drop-off runs are organised to facilitate the travelling of workers to and from the site and for integration into the existing public transport nodes.

ISJV pool vehicle runs from each site will be carried out at five (5) times per day or on request through the ISJV site superintendent:

- First shift;
- Mid-morning break;
- Lunch break;
- Afternoon break; and
- End of shift.

Local workers are to be encouraged to utilise cycle ways and walking tracks to access the pick-up/drop-off points.

#### 4.19.4 Alternative Parking Arrangements

Displaced car parking is being integrated into the detailed design with compensatory car-parking provided for the T-Way off Samantha Riley Drive and Balmoral car park for commuters.

Localized temporary parking arrangements will be facilitated through the CTMSP which will incorporate the CTCP and a sub- PaMP to ensure that there is no loss of parking during the works.

#### 4.19.5 Communication of Parking Management Measures

Parking management is communicated to the businesses, general public, and other external stakeholder's via individual notifications outlined in the CLIP processes and procedures, i.e. 7 days notice, letterbox drops, doorknocks as appropriate.

Changes to parking may also include signage and Variable Message boards. Major changes including VMS messages are outlined in CTMSPs.

The Traffic management stream is informing bus operators, local councils, and others authorities through the TTLG with regular updates on progress when works are imminent. Items of significance which are flagged by the TTLG will need to be brought before the Council Traffic Committee.

### 4.20 Buses, Taxis, and Other Modes of Public Transportation

The construction activities account for 5% or less increases in traffic in most instances and are scheduled to avoid peak traffic times to further minimize the impacts to public transport modes. Nevertheless there will be impacts to the public transportation network as follows:

- Balmoral T-way station: bus operations should be able to be maintained as normal with the proposed construction access off Balmoral Road on a constructed haul road specifically utilised by ISJV. The T-Way station would be closed whilst the Balmoral Road is re-aligned and T-Way is reconstructed. Impacts to bus operations during the reconstruction of the T-Way are described in the CTMSP for the works.
- Memorial Avenue: bus operations will be maintained as normal with access to Old Windsor Road rather than T-Way in order to undertake works on the 2 piers within this section of the works.
- Burns T-Way Station : bus operations will continue as normal with proposed construction access to site via the carpark in order to minimize bus operational impacts;
- Samantha Riley T-Way Station: will continue as normal with proposed construction access to site not impacting the buses.

- Merrivale T-Way Station: the bus stop would be partially affected during the construction of the adjacent spans. Some exclusion zones would be marked at the T-Way stop.
- Bus operations would be occurring concurrently with construction traffic travelling along T-Way In order to minimize impacts busses would be given right of way.
- Rouse Hill Town Centre Station: this will need to be relocated during the construction works. Temporary bus stops will need to be created along Tempus Street and a layover area in the old T-Way in order to facilitate the existing passengers. A new layover area for the bus drivers and existing facilities is being relocated in a new facility currently referred to within the Sydney Metro North West documentation as the Southern Bus Layover. After creation of these facilities there should be no impacts to bus operations.
- During lane closures there would be bus detours and impacts to bus stops. These are detailed in the various CTMSPs.

#### **4.21 Maintenance of Access to Transport Networks, Parking, and Property (inclusive of Station Facilities, Station Sites, and other Locations identified)**

The design has been undertaken to ensure that there have been temporary facilities provided for transport operators and the community to ensure that there is maintenance of access to all existing facilities. These local accesses will be further developed through the CTMSP for the specific locations and included in the CTCP.

## 5 MANAGEMENT OF TRAFFIC IMPACTS

### 5.1 Key Traffic Related Risks

ISJV's overarching aims in managing the impacts of construction activities through the life of the project are to minimise disruption and delay to the affected public and road users, maintain the functionality and accessibility of local areas, and protect the safety of workers and the public.

ISJV has applied risk management techniques to determine project hazards, the level of risk they pose to people and to the successful delivery of the project, as well as appropriate control measures.

The management of traffic impacts is a key component of this risk analysis and planning.

The following table shows examples of traffic and road safety risks identified aligning with the TCWSM (Section 2.10 Risk Management).

Table 5-1: Risk Assessment Traffic Management

Hazard
Proximity of work to live traffic
Speed and volume of traffic
Type of traffic (clear lane width is applicable to traffic flow)
Noise levels (EPA has certain restrictions / requirements)
Heavy weather and/or other delays to Project Programming

These risks are captured along with other project risks in the Project Risk Register which forms part of the Risk Management Plan, a living document that we will keep updated throughout the life of the project. The Risk Management Plan outlines the risk management process for identifying and addressing risks including those associated with road safety, traffic management and surrounding road network issues related to the project.

### 5.2 Traffic Management Strategy

A CTMP will be prepared for each major work site and associated haulage operations to ensure specific traffic impacts are identified and mitigated. Accurate traffic management data will be collected and analysis provided to determine effective mitigations, measure performance and optimise the traffic management approach.

The elements of the traffic management strategy that will be considered in the preparation of the CTMSPs for each major work site, to mitigate potential impacts, are outlined in Table 5-2: Elements of the Traffic Management Strategy.

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Table 5-2: Elements of the Traffic Management Strategy

Element	Strategy
Stakeholder/Businesses and Public Notifications	<ul style="list-style-type: none"> <li>• Liaise with Businesses/residents in accordance with Community Liaison Implementation Plan and the Business Management Plan</li> <li>• Alternative arrangements for parking and localized accesses developed</li> <li>• Ongoing engagement as per the Community Liaison Implementation Plan and the Business Management Plan</li> </ul>
Planning	<ul style="list-style-type: none"> <li>• Identify all work activities in each work site (as per Table 1-1) and prepare staged construction plans</li> <li>• Investigate site conditions and existing traffic movements (vehicular, pedestrian and bicycle). Assess impacts through modelling, due to proposed changes and construction activities</li> <li>• Develop Traffic Staging Plans and CTCPs as per G10 specification and TCWSM to minimise disruption to traffic and eliminate any safety issues. Guide drivers and pedestrians past construction work sites and on the surrounding road network using directional signage and line marking, using approved and appropriate traffic management devices in accordance with AS 1742</li> <li>• Develop Staging Plans, CTMSPs and CTCPs for each work site and construction activity as per TCWSM and ROM showing details of directional signage and line marking to direct and guide drivers and pedestrians past work sites and on the surrounding network. Advise drivers via portable variable message sign (VMS) of potential delays, speed restrictions, advice on alternate routes, etc.</li> <li>• Develop Construction Vehicle Movement Plans (CVMP) as part of the CTMSPs for temporary work, such as diversions, to provide safe passage while constructing the viaduct, bridge and cut and cover structures and roadwork</li> <li>• During detailed construction planning and the development of detailed CTMSPs for each work site, consider the need to provide alternative remote parking locations and shuttle bus transfers for day and night construction staff for all construction work sites</li> <li>• Identify any items likely to need Council Traffic Committee reviews and approvals</li> </ul>
Traffic management	<ul style="list-style-type: none"> <li>• Coordinate with RMS via TfNSW Transport Management Centre's Traffic Operations Manager in event of incidents or undue congestion to minimise delays and improve public safety</li> <li>• Where feasible, avoid significant construction traffic movements in the morning peak period southbound and the evening peak period northbound</li> <li>• Manage pedestrians and vehicular access to and past construction sites with properly developed traffic control measure as per G10 specifications and NSW relevant codes and manuals</li> <li>• Depending on the location, use traffic controllers, physical barriers, temporary traffic signals and modification to existing traffic signals and on occasions police presence</li> <li>• Material handling – loading and unloading to take place within the construction zone and not on public roadways; plan loading and unloading to eliminate truck reversing</li> <li>• Use traffic controllers to manage heavy vehicle movements at work sites where necessary and monitor the need for pedestrian control with appropriately positioned safety measures</li> <li>• Install temporary Closed Circuit Television (CCTV) at locations identified in consultation with TfNSW and RMS and connect the cameras to the Transport Management Centre (TMC) if requested.</li> <li>• Avoid high traffic count activities during peak hours, i.e., stage works to occur predominantly between 9 am and 3 pm or out of hours if required due to safety concerns.</li> </ul>
Public transport	<ul style="list-style-type: none"> <li>• During detail construction planning analyse the management of buses at key</li> </ul>

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Element	Strategy
	<p>transport interchanges, such as Rouse Hill, at a strategic level and negotiate/communicate amelioration to minimise impacts on existing services</p> <ul style="list-style-type: none"> <li>• Maintain T-Way operations, including car parking, where possible during the construction activities. This includes design and maintenance of safe access to T- Way bus stops and within T-Way car parks as per Australian Standards and Austroads guidelines</li> </ul>
Public safety and amenity	<ul style="list-style-type: none"> <li>• Promote the use of public transport. Liaise with the TfNSW's TMC in the event of incidents or undue congestion</li> <li>• Liaise with TTLG on proposed alterations to the road network/public transport changes prior to implementation</li> <li>• Notify the public of proposed traffic changes by print, media, radio or internet site and community notification, and other forms of community liaison, such as social media as appropriate</li> <li>• Maintain access to existing business premises and residents for pedestrians, servicing, bike access, and parking</li> <li>• Employ visual sight screens where appropriate and safe to do so, in accordance with AS 1742</li> </ul>
Special Events	<ul style="list-style-type: none"> <li>• ISJV to work under TMC guidance in order to minimize special event impacts</li> <li>• ISJV to minimize heavy traffic count activities during Special Events likely to impact on the works</li> </ul>
Road Condition Surveys, Road Safety Audits and Road Openings	<ul style="list-style-type: none"> <li>• Road condition surveys are to be undertaken prior to works beginning</li> <li>• Pre, During, and Post Completion road safety audits will be undertaken in accordance with Exhibit A Annexure 1 Pt 1 Clause 5.11 and Exhibit A Annexure 2 Part 1 Clause 4.6 and 4.7 of the Sydney Metro North West SVC Deed</li> <li>• Road openings will be undertaken in accordance with Local Council or RMS Road Opening Permit requirements in accordance with RMS Specification M209 or Local Council requirements whichever govern the particular road.</li> </ul>

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### 5.3 Methodology for Managing Traffic Impacts

Section 5.3.1 to section 5.3.3 describe the traffic management documentation that ISJV will develop and employ to manage traffic issues around specific construction work sites and associated haulage operations.

Section 5.3.4 describes the key traffic management controls required to manage traffic issues around specific construction work sites and associated haulage operations.

Section 5.3.5 describes how accurate traffic management data will be collected and analysis provided to determine effective mitigations, measure performance and optimise traffic management at each work site.

SIDRA modelling software will be used to analyse the impact of traffic staging, temporary road closures (full and partial) and lane occupancy during construction and in designing the detailed work site CTMSPs, if required.

All activities relating to traffic management including design, data collection, modelling, implementation and monitoring will be undertaken in accordance with relevant specifications, codes, standards and manuals (as outlined in section 3.1).

#### 5.3.1 Work Site Construction Traffic Management Sub-Plans

Specific CTMSPs will be prepared for each major work site as detailed in Table 1-1: Schedule of CTMSPs in accordance with MSP22L Traffic Risk Management Procedure V1R1.

The CTMSPs will be submitted for concurrence of the TTLG and approval of the BMTMC or TMC as applicable at least 1 month prior to implementation and will address all traffic issues outlined in Section 4.1: Identified Impacts.

These sub-plans will incorporate the following details as applicable:

- Detailed plans for the individual worksite areas addressing legislative and contractual requirements;
- Design of any Works Authorisation Deed Works packages;
- Construction route haulage management plans;
- Internal/external haul road design packages;
- Temporary works design packages;
- Traffic staging plans packages;
- Road condition surveys; and
- Traffic counts and modelling results.



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These plans will address the traffic control and safety aspects of the works determining people, plant, and equipment separation methods.

### 5.3.2 Work Site Construction Traffic Control Plans (CTCP)

Each of the worksite specific CTMSPs will include CTCPs detailing alterations to the road network. The CTCPs will be prepared in accordance with MSP22L Traffic Risk Management Procedure V1R1.

Each of these plans will contain the following as applicable:

- Construction Vehicle Movement Plans (CVMPs)
- Safety, Health & Environment Work Method Statements
- Pedestrian Access Management Plans (PAMPs)
- Parking Management Plans (PaMPs)

### 5.3.3 Matters for Consideration In CTMPS and CTCPS

Table 5-3: Matters for consideration in CTMPs and CTCPS

Aspect	Details	Relevant Guideline/Specification/Policy/Manual
Stakeholder & Community Liaison	Stakeholder and community liaison to be undertaken in accordance with the relevant requirements. Feedback from these activities is to be incorporated into the CTMPs and CTCPS, where relevant and applicable.	TMC Requirements Community Liaison Implementation Plan Business Management Plan

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Aspect	Details	Relevant Guideline/Specification/Policy/Manual
Workers and road user safety and people, plant and equipment separation.	<p>ISJV will ensure the safety of the public and road users through a combination innovative construction methodology and detailed traffic planning that meets Australian standards.</p> <p>Where safety barriers are not provided between the traffic lanes and the construction work sites, plant or materials stored on the construction site, ISJV will comply with the minimum clear zone requirements.</p> <p>ISJV's WHS Management Plan and Risk Management Plan details the risks and controls applicable to personnel undertaking activities on or near the roadway.</p> <p>In order to maintain safety for all workers and road users on the site and on the roads surrounding the site, the following safety measures will be adopted/implemented:</p> <ul style="list-style-type: none"> <li>Barriers, where required by the TCWSM and the CTCP, will be used to provide a physical separation between the travelled path and the work area to inhibit penetration by an out-of-control vehicle</li> <li>Safe access across the road network will be provided to each work area in the form of but not limited to: <ul style="list-style-type: none"> <li>Underpasses</li> <li>At-grade pedestrian crossings</li> </ul> </li> <li>Limit as much as possible closures and restriction of traffic/road user at the viaduct crossing with the following roads: <ul style="list-style-type: none"> <li>Memorial Avenue crossing</li> <li>Samantha Riley Drive crossing</li> <li>Windsor Road crossing</li> <li>Sanctuary Drive crossing</li> <li>White Hart Drive crossing</li> <li>Rouse Hill Drive crossing</li> </ul> </li> <li>Minimise diversions and rerouting at the following work areas: <ul style="list-style-type: none"> <li>Balmoral Road reconfiguration</li> <li>Windsor Road reconfiguration</li> </ul> </li> <li>Staging the construction works at each work site will be outlined in each work site CTMSP as well as the Construction Plan.</li> </ul>	<p>ISJV's WHS Management Plan</p> <p>ISJV Project Risk Management Plan</p> <p>AS 1742.3</p> <p>TCWS</p> <p>PSTS 02 Exhibit A Crossing requirements on Freeway Sydney Metro North West SVC Sites</p> <p>TfNSW QA Specification D&amp;C G10 – Traffic Management (G10 specifications)</p>
Minimum traffic requirements	ISJV will maintain existing capacity to ensure that there are limited impacts on through traffic unless approved by TMC otherwise	<p>TCWSM</p> <p>TMC approvals</p>

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Aspect	Details	Relevant Guideline/Specification/Policy/Manual
Accommodating NSW Police Service, emergency services, RMS and Council operations	<p>ISJV will liaise closely with BCC, THSC, RMS and Police Services through the guidance of the TTLG and in accordance with the requirements of the TMC to ensure that there is minimal disruption to their operations. Refer to Section 7 for further information on TTLG.</p> <p>Prior to the commencement of construction, ISJV will meet with identified stakeholders to provide briefings on the CTMPs during construction phases. Regular traffic notifications relating to changes that affect the operation of the road network or traffic systems will also be disseminated. Prior to major changes, liaison with the TMC will be undertaken for approvals, and if required by the TMC other government agencies and service providers, including the NSW Police, NSW Fire Brigades, the Ambulance Service of NSW, State Emergency Service, State Transit Authority, Ministry of Transport and Local Government Authorities.</p>	<p>Community Liaison Implementation Plan</p> <p>Business Management Plan</p> <p>Advice to RMS, THSC and BCC Procedure</p> <p>CTMSP</p> <p>TMC Requirements</p>

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Aspect	Details	Relevant Guideline/Specification/Policy/Manual
Lane or road closures	<p>Scope:</p> <p>Short term lane closures</p> <p>Each CTMSP will contain indicative ROLs and ROPs.</p> <p>Long term lane closures</p> <p>ISJV will detail opportunities for implementing long term lane closures to facilitate the construction works at each work site listed in Table 1-1 and provide a safe working environment for ISJV employees and contractors through the CTCP.</p> <p>A register of ROLs and TCPs will be updated weekly or as significant changes occur to the road network.</p> <p>Timing of closures:</p> <p>As approved by the TMC ROL</p> <p>Consultation:</p> <p>In consultation with the relevant road authority and the TMC as the approving authority</p> <p>Special Considerations:</p> <p>REMM T33 (SSI-5415) Either Cudgegong Road or Tallawong Road is to remain open to traffic and bus services to maintain a route from Guntawong Road to Schofields Road.</p> <p>It is recognised that the Rouse Hill Town Centre is a busy trading area and that the project construction will have an impact on the area. Detailed planning of works in the area will take into consideration SWTC Appendix 7, to minimise road closures on, and the use by construction vehicles of, roads in the vicinity of the Rouse Hill Town Centre during:</p> <p>(a) the months of December and January; and</p> <p>(b) the two week Easter period i.e. one week either side of Easter Sunday.</p>	TCWS ROL

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Aspect	Details	Relevant Guideline/Specification/Policy/Manual
Detours	<p>ISJV will demonstrate that proposed detours have sufficient capacity and are capable of supporting expected traffic volumes during the use of the detour.</p> <p>Where traffic detours are required and where practical, they will only occur between 9pm and 5am, unless agreed to by the relevant road authority.</p> <p>Show the maximum:</p> <ul style="list-style-type: none"> <li>• Extra length added to motorist trips</li> <li>• Extra delay for motorists</li> <li>• Number of hours for which a detour is to be implemented.</li> </ul> <p>For all planned detours, ISJV will:</p> <ul style="list-style-type: none"> <li>• Inspect the route for adequacy for the entire length of the detour</li> <li>• Identify any repair work which may be required prior to diverting traffic and any rectification work which may be required following the detour period</li> <li>• Provide suitable directional signage and other infrastructure to guide motorists (such as portable VMSs) in line with the individual CTCP</li> </ul> <p>Consultation:</p> <p>Where detours are required, ISJV will liaise with and make all necessary arrangements with the TMC for approvals, and if required by the TMC other government agencies and service providers, including the NSW Police, NSW Fire Brigades, the Ambulance Service of NSW, State Emergency Service, State Transit Authority, Ministry of Transport and Local Government Authorities to be advised. Guidance will be sought by the TTLG and stakeholder and businesses will be contacted as detailed in ISJV's CLIP and BMP.</p>	<p>Individual CTMSP</p> <p>AS 1742.3</p> <p>Community Liaison Implementation Plan</p> <p>Business Management Plan</p>
All traffic control devices	As per individual CTCP developed specifically	<p>Individual CTMSP</p> <p>AS 1742.3</p> <p>TCWSM</p>

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Aspect	Details	Relevant Guideline/Specification/Policy/Manual
Portable and temporary fixed traffic signal arrangements and changes to existing traffic signals and detectors	Development of the location, type and changes to existing traffic signal and detectors will be in accordance with each individual CTCSP and where applicable approved by RMS Traffic Signal group and RMS Network Operations	AS 4191 and Part 3 of the TCWSM RTA Traffic Signal Design Manual
Traffic barrier types, locations, details, extents and terminal treatments	Development of the location, types, locations , details extent and terminal treatments will be in accordance with each individual CTMSP and relevant CTCPs	AS 1742.3 TCWSM AS/NZS 3845:1999 Individual CTMSPs



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Aspect	Details	Relevant Guideline/Specification/Policy/Manual
Regulatory, information and advance warning signage	<p>Information and advance warning signage will be installed at the work sites and the surrounding road network and will include:</p> <ul style="list-style-type: none"> <li>• Protection of workers</li> <li>• Provision of adequate warning of changes in surface condition and the presence of personnel or plant engaged in work on the road</li> <li>• Adequate instruction of road users and their safe guidance through, around or past the work site(s)</li> </ul> <p>ISJV will design, supply, install and maintain all directional, information and regulatory signs and structures required for the work, including any modifications required to existing signs and sign structures and will:</p> <ul style="list-style-type: none"> <li>• Prepare scaled signpost layout plans showing the locations of existing and new or modified signposting in all directions as well as sign face and structure details</li> <li>• Install and cover all new directional signs a minimum of one week prior to opening of a new construction phase</li> <li>• Cover or change existing signposting that shows incorrect information during or immediately following the introduction of the new traffic arrangements</li> <li>• Remove any signs that are redundant as a consequence of the works</li> <li>• Reinstate all relevant directional signposting at the completion of the works</li> </ul> <p>Flashing arrow signs (vehicle or trailer mounted units) will also be used to protect the workforce and provide driver guidance during the installation, or removal of lane closures or during the initial implementation of traffic route alterations.</p> <p>All requirements for public notification as detailed in the ISJV CLIP will be considered and outlined in the work site CTMSPs and associated CTCPs where relevant to traffic management.</p> <p>Consultation:</p> <p>Locations, type and timing of installations of temporary information and advanced warning signage to be undertaken in accordance with the Business Management Plan, TCWSM, TMC approvals and in consultation with the TTLG.</p>	<p>AS/NZS 1742</p> <p>TfNSW Specification D&amp;C G 10 – Traffic Management</p> <p>RMS Traffic Control Worksites Manual</p> <p>AS 4191</p> <p>AS 4192</p> <p>AS 2.5.2</p> <p>Individual CTMSPs</p>

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Aspect	Details	Relevant Guideline/Specification/Policy/Manual
Portable VMSs	<p>Portable VMSs will be deployed during the works to inform motorists of any significant changes to the road network.</p> <p>Proposed messages to be broadcast on each VMSs will be included in the relevant CTCP.</p> <p>Any additional VMSs required during the works will be provided within an acceptable time (nominally 4 hours) of being notified by the TMC.</p> <p>Consultation:</p> <p>Locations, type and timing of installations of temporary information and advanced warning signage to be undertaken in accordance with the Business Management Plan, TCWSM, TMC approvals and in consultation with the TTLG.</p>	<p>TfNSW TDT 2010/07 Use of Variable Message Signs</p> <p>RMS Traffic Control Worksites Manual</p> <p>AS 4191</p> <p>AS 3.16.6</p> <p>Individual CTMSPs</p>
Use of truck-mounted attenuators (TMA)	<p>Consideration will be given to installing TMAs on vehicles:</p> <ul style="list-style-type: none"> <li>Used to effect lane closures on multi-lane roads</li> <li>Used as shadow vehicles on mobile works as a device for traffic management and to protect workers</li> </ul>	<p>AS 1742</p> <p>RMS Traffic Control Worksites Manual</p>
Temporary CCTV locations, timing and installation	<p>Temporary CCTV may be installed at appropriate locations including:</p> <ul style="list-style-type: none"> <li>Burns T-Way Station Car Park</li> <li>Riley T-Way Station Car Park</li> <li>Rouse Hill Southern Bus Layover</li> <li>Tempus Street Bus layover</li> </ul> <p>Temporary CCTV may be supplied, installed, tested, commissioned and maintained by ISJV and connected if identified as required during delivery.</p> <p>Consultation:</p> <p>Locations and timing of installations of temporary CCTV to be undertaken in consultation with the TTLG.</p>	<p>Design process</p>

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Aspect	Details	Relevant Guideline/Specification/Policy/Manual
Temporary road diversions/deviations	<p>Temporary deviations will be constructed where required to ensure the safe and efficient movement of traffic. The following will be detailed in individual CTCs for each works site:</p> <ul style="list-style-type: none"> <li>Location of temporary deviations</li> <li>All traffic control devices, traffic barrier types and geometry</li> <li>Delineation through the work area</li> </ul> <p>After a traffic diversion has been put in place, ISJV will:</p> <ul style="list-style-type: none"> <li>Maintain all the resources (including labour and equipment) that were used to implement the traffic diversion onsite for two days after the implementation of the traffic diversion</li> <li>Ensure that the roadway that the traffic was travelling on before the diversion will remain undisturbed for at least two days (addressing any risk of new road failure or traffic management compliance issues relating to CTMPs requirements)</li> <li>Comply with the public notification requirements as detailed in ISJV's CLIP.</li> </ul>	<p>RMS Traffic Control Worksites Manual</p> <p>Australian Standards</p> <p>Relevant RMS technical standards</p> <p>AS 4191</p> <p>AS 4192</p> <p>Individual CTMSPs</p>
Temporary Speed Zones	<p>Temporary Speed Zones will be implemented when road works are on or adjacent to the road to assist in controlling the speed of traffic through the roadwork site.</p> <p>Speed zone markers will be located where they appear reasonable to drivers.</p> <p>All non-applicable or redundant speed limit signs will be securely covered or removed (not turned around) during any period for which roadwork speed limits apply.</p> <p>Appropriate records will be kept (for 7 years) of the locations, dates and times that road work speed limits are in operation.</p> <p>Consultation:</p> <p>Temporary Speed Zones will be implemented following RMS approval/issue of a Speed Zone Authorisation (SZA).</p> <p>The TMC will be notified and approvals sought, and if required by the TMC other government agencies and service providers, including the NSW Police, NSW Fire Brigades, the Ambulance Service of NSW, State Emergency Service, State Transit Authority, Ministry of Transport and Local Government Authorities to be advised. Guidance will be sought by the TTLG and stakeholder and businesses will be contacted as detailed in ISJV's CLIP and BMP.</p>	<p>TfNSW Speed Zoning Guidelines</p> <p>Section 8 of the TCWSM</p> <p>Community Liaison Implementation Plan</p> <p>Business Management Plan</p>

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Aspect	Details	Relevant Guideline/Specification/Policy/Manual
Pavement markings and line marking	All pavement markings and line markings will be applied in accordance with RMS Delineation Guidelines and relevant Australian Standards. Detail of pavement markings and line markings are shown in the individual CTCPs for each site.	RMS Delineation Guidelines TCWSM AS 1348
Vertical and horizontal geometry of affected roads and pathways	The vertical and horizontal geometry of the any new and/or temporary road, pedestrian pathway or cyclist route diversions/deviations will be detailed in the relevant staging designs for each individual site adjustment as required within the ISJV Design Plan.	Exhibit A SWTC Appendix 24 – Project Plan Requirements Section 24.6 Project Design Plan
Minimum vertical clearance	The minimum vertical clearance from the trafficked surface to any overhanging obstacle will be 4.6 metres.	Exhibit A SWTC Appendix 24 – Project Plan Requirements Section 24.6 Project Design Plan
Drainage provisions,	Drainage provisions, including aquaplaning prevention measures and pavement drainage, will be outlined for each work site if required for new and temporary works.	Exhibit A SWTC Appendix 24 – Project Plan Requirements Section 24.6 Project Design Plan
Pedestrian and cyclist provisions	<p>Pedestrian and cycle routes will be identified along the entire construction site. Provision will be made within each work site for safe ongoing access by pedestrians and cyclists along comparable standard paths. Each work site CTCP will:</p> <ul style="list-style-type: none"> <li>• Map the locations of the relocated pedestrian and cycle routes</li> <li>• Highlight the sections where cyclists will have to give way to pedestrians due to physical restraints</li> <li>• Outline the type and location of appropriate signage to be erected to inform users of the changes to the pedestrian and cycle routes</li> </ul> <p>Consultation: Relocation of pedestrian and cycle routes will be undertaken in consultation with the appropriate road authority.</p>	AUSTROADS s TfNSW Bicycle Guidelines Individual CTMSPs

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Aspect	Details	Relevant Guideline/Specification/Policy/Manual
Public transport alterations including T-Way operations, relocation of bus stops and bus transit lanes	<p>The construction of the viaduct requires that modifications be made to both Burns Rd and Riley T-Way car parks, with an additional temporary car park to be constructed at Riley T-Way bus stop. Bus interchange would be relocated to Tempus Street in order to allow access to the old interchange for the construction of piers.</p> <p>The T-Way operations, including car parking, will be maintained at all times during the construction of the viaduct. This includes maintaining existing sight lines to T-Way bus stops and within T-Way car parks, where possible. Where this is not possible, suitable alternative measures would be implemented (e.g. CCTV with active surveillance) where reasonable and feasible.</p> <p>Traffic management in car parks will address viaduct construction methodology and safety of the public who are using the car parks.</p> <p>It is likely that the T-way will be used at various points for site access and potentially some hauling of bridges segments. The Impact / use of T-way as part haulage route are to be minimized through the haulage of segments at night. Reference to individual CTMSP should be made for specific T-way interfaces.</p> <p>Consultation:</p> <p>For any alteration to the operation of the T-Way and other public transport ISJV will consult with and gain approval from TfNSW and RMS and other operators. The SVC Community Liaison Management team will ensure bus passengers and the community are notified, in conjunction with appropriate and timely signage onsite, as specified in the ISJV CLIP.</p> <p>TMC will process the ROLs on the T-way subsequent to receipt of approval from RMS (as roads authority for T-Ways) and confirmation that bus operators have been consulted.</p>	<p>Exhibit A SWTC Appendix 19</p> <p>T-Way Access Protocols (currently being developed by RMS)</p>

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Aspect	Details	Relevant Guideline/Specification/Policy/Manual
Parking provisions	<p>Burns T-Way Station Car Park</p> <p>Parking requirements during construction:</p> <p>100 car park spaces, including 6 disabled parking spaces</p> <p>Riley T-Way Station Car Park</p> <p>Parking requirements during construction:</p> <p>Minimum 141 car parking spaces, including 6 disabled parking spaces (including spaces provided as part of the Temporary Riley T-Way Station Car Park.</p> <p>Other areas:</p> <p>Impacts to existing parking (on and off street) will be minimised, including the amount of spaces reduced and the time associated with this reduction. Where parking is impacted, particularly for periods greater than four weeks, alternate parking arrangements will be implemented. Displaced vehicles must not be accommodated on the state road network".</p>	<p>Exhibit A SWTC Appendix 19</p> <p>T-Way Car Park Adjustments Design Report (SMEC)</p>



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Aspect	Details	Relevant Guideline/Specification/Policy/Manual
Property access provisions	<p>Access to private property will be maintained during construction unless otherwise agreed with the property owner in advance. Where impacts on access to commercial properties are unavoidable, ISJV will work outside normal business operating hours or seek a solution through consultation with business owners and occupiers.</p> <p>Scope:</p> <p>ISJV will carry out the construction works and do everything necessary to satisfy the reasonable requirements of the community that are affected by the Sydney Metro North West SVC activities.</p> <p>During construction, ISJV will ensure that existing entrances to private property, whether homes or businesses, affected by the work are maintained in a usable condition. The following guidelines will apply to this requirement:</p> <ul style="list-style-type: none"> <li>• Subject to safety considerations and physical constraints, the location of the entry will be as close as practicable to the existing entrance</li> <li>• Where this is not possible, alternative arrangements that are acceptable to the property owner will be made</li> <li>• Entries to businesses will be signposted and, if deemed necessary, have advance signage to warn of changed conditions</li> <li>• Reduction to the level of access to residential properties or other properties will be limited to the absolute minimum duration necessary to carry out the relevant Sydney Metro North West SVC activities</li> <li>• Free movement in and out of properties will be maintained, where practicable.</li> </ul> <p>Within seven days of completion of any activity that requires the establishment of temporary accesses to private property ISJV will in consultation with the property owner ensure that:</p> <ul style="list-style-type: none"> <li>• Permanent access will be restored to at least an equivalent standard</li> <li>• Temporary access measures are removed after restoration of permanent access.</li> </ul> <p>Consultation:</p> <p>If performance of any part of the Sydney Metro North West SVC activities will, or is likely to, modify the level of access to any property, ISJV will give at least 15 business days' notice to the owner/occupier, in accordance with procedures defined in the ISJV CLIP.</p>	<p>Individual CTMSPs</p> <p>Business Management Plan (Sub plan to Community Liaison Implementation Plan)</p>

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Aspect	Details	Relevant Guideline/Specification/Policy/Manual
Construction access to compounds and work sites including boom gate arrangements	Construction access to compounds and works sites are detailed in the individual CTMSP, CTCP and VMP for each identified site (refer Table 1-1)	Section 4.1-4.11 Individual CTMSPs
Truck call forward locations and arrangements	Construction access to compounds and works sites are detailed in the individual CTMSP, CTCP and VMP for each identified site (refer Table 1-1)	Section 4.1-4.11 Individual CTMSPs
Temporary road lighting provisions	Details of temporary lighting and the removal of existing lighting will be outlined for each work site.  ISJV will supply, install, operate and maintain the temporary road lighting for the full period during which the relevant road is required and/or until the permanent road lighting is installed and becomes operational	RMS Traffic Control at Worksites Manual (TCWM)
Provisions for major public (special) events	ISJV will facilitate traffic flow and avoid congestion as far as practical during special events. Works are predominantly to be staged to avoid activities during special events.  Traffic management during special events such as lane closure and road occupancy restrictions will be determined by the TTLG, Police and TMC and implemented by ISJV. Details of the traffic management during special events, once agreed to with the relevant authorities, will be outlined in the relevant Special Event work site CTCPs.  Consultation:  ISJV will consult with the TTLG to determine the changes to the SVC construction activities needed to accommodate the requirements of special events. ISJV will cooperate with the Principal's Representative to facilitate the special event and any associated traffic and pedestrian flows around the construction work sites.	TTLG TMC requirements

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Aspect	Details	Relevant Guideline/Specification/Policy/Manual
Maintenance	ISJV will maintain all roads within the licensed area as required. Refer to Monitoring and Protection Plan which addresses dilapidation surveys and reports to comply with CoA.	ISJV-SVC-PMS Procedure MSP-22C Traffic Risk management  Monitoring and Protection Plan
Over dimension (height/weight) and dangerous goods vehicles	ISJV will obtain a Special Permit from RMS in line with RMS publication Operating Conditions: Specific permits for oversize and overmass vehicles and loads, as required	Operating Conditions: Specific permits for oversize and overmass vehicles and loads

### 5.3.4 Traffic Management Performance and Optimisation

This section describes how accurate traffic management data will be collected and analysis provided to determine effective mitigations, measure performance and optimise traffic management at each work site.

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Table 5-4: Traffic management and performance optimisation studies

Aspect	Details	Relevant Guideline/Specification/Policy/M anual
Traffic Monitoring and prediction process	<p>Processes for traffic monitoring and prediction will be implemented with the capability to determine and monitor the effects of construction activities in critical areas. SIDRA analysis will be undertaken where required and agreed with the relevant road authority. Micro simulation/linear models will be used as necessary.</p> <p>The effectiveness of the CTMPs in respect to traffic impacts will be monitored and reported quarterly to the TTLG. Monitoring will include actual measures of traffic flow and a review of road user behaviour including travel time surveys, traffic counts and queue length surveys.</p> <p>The processes will deliver the necessary performance indicators to fulfil the reporting requirements of each of the CTMPs/CTCPs and provide backup information for each TTLG meeting.</p>	Austroads Guide To Traffic Management Part 3: Traffic Studies and Analysis
Road network performance and travel time surveys	<p>Travel time surveys will provide information about the effects of construction activities on the road performance at or near the construction works where road capacity is changed. Detailed intersection analysis will be undertaken for any intersection identified as being adversely affected by the construction works.</p> <p>Travel time surveys will be undertaken using the floating car methodology between 7am and 9am, 12pm and 2pm, and 3pm and 7pm for each identified route at suitable intervals. Surveys will not be undertaken on public or school holidays. Departure times at the start points and key nodes, and arrival times at the end points, will be recorded. Survey runs will be undertaken in the specified direction and nominated hours as appropriate.</p> <p>In addition, travel time surveys will also be conducted to obtain data relating to arterial trips in both north-south and east-west directions as required. Arterial trips will be surveyed for incremental and overall travel times. At the completion of each survey, reports will be presented to the TTLG and RMS in the form of a graph with average travel time as the vertical axis and the months surveyed along the horizontal axis.</p> <p>Car travel time surveys will be the primary tool for determining the real impact of construction activities on the travelling public on the designated road network.</p>	Austroads Guide To Traffic Management Part 3: Traffic Studies and Analysis

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Aspect	Details	Relevant Guideline/Specification/Policy/Manual
Data collection and studies	Traffic data collection will be undertaken to establish the base case traffic conditions before construction and during construction for critical areas such as the Windsor Road crossing. Data collection will include traffic counts and queue length surveys in addition to the travel time surveys detailed above. If required by the TTLG, origin and destination surveys will be conducted at specific construction work sites.	Austroads Guide To Traffic Management Part 3: Traffic Studies and Analysis
Traffic counts	<p>Key intersections will be surveyed on Tuesday, Wednesday or Thursday from 6am to 10am and 3pm to 7pm as required. In some areas, traffic counts during the times of 10am to 3pm may be required.</p> <p>Major roads will also be surveyed via tube counters over an entire week. These counts will involve 24 hour surveys.</p> <p>No survey will be undertaken on school or public holidays.</p> <p>Data collection will be as required and data used will be no older than 12 months.</p>	Austroads Guide To Traffic Management Part 3: Traffic Studies and Analysis
Queue length surveys	<p>Queue length will be surveyed at key intersections within the Sydney Metro North West SVC Works, as necessary to allow validation of SIDRA or micro simulation/linear models.</p> <p>Queue length survey methodologies will comply with Austroads Guide to Traffic Engineering Practice, Part 3: Traffic Studies.</p>	Austroads Guide To Traffic Management Part 3: Traffic Studies and Analysis
Outputs from traffic surveys	The outputs from the surveys will be provided to RMS/BCC/THSC in hard and soft copy formats. The information will include all electronic data files to enable the inspecting authority to review the data. Graphical representations of the data will be presented to the TTLG.	Austroads Guide To Traffic Management Part 3: Traffic Studies and Analysis

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### 5.4 Incident Management and Response

Any traffic incidents within or adjacent to the SVC work sites will be responded to and managed in accordance with the ISJV-SSERP.

ISJV will assist the emergency services and New South Wales Police Service as required and will provide traffic control by qualified traffic controllers for emergencies such as crashes and spillages within or adjacent to the SVC work sites.

The ISJV Emergency Coordinator will assign labour, plant and material to repair, make safe and/or cordon the area to prevent disturbance until an investigation (e.g. WorkCover) has been completed.

In addition to any other provision of the Project Deed, where the New South Wales Police Service, Emergency Services, RMS and TMC are controlling an incident, the project team:

- Will comply with any instruction or direction by the New South Wales Police Service, Emergency Services, RMS and TMC in relation to any proposed closure to a lane or shoulder
- Will not restrict, close, interfere with or obstruct the free flow of traffic on any lane or shoulder of the existing highway, the works or a local road contrary to the instructions of the New South Wales Police Service, Emergency Services, RMS and TMC and,
- If permitted to restrict, close, interfere with or obstruct the free flow of traffic on any lane or shoulder of the existing highway, the works or a local road, shall act in accordance with any instructions of the New South Wales Police Service, Emergency Services, RMS and TMC including to suspend any of the contractor's work and to re-open the lane or shoulder. Except to the extent that compliance with any instructions of the New South Wales Police Service, Emergency Services, RMS and TMC makes it impossible to do otherwise, this clause shall not relieve the project team from its obligations under the Project Deed.

The types of emergencies / unplanned incidents that may occur include, but are not limited to:

- Motor vehicle crashes
- Bush fires
- Environmental spills
- Terrorist attacks
- Bomb threats
- Construction type incidents
- Structural catastrophic failures
- Inclement weather conditions
- Flooding and
- Anti-social behaviour
- Building fires

Relevant Acts identify agencies primarily responsible for controlling particular hazards/emergencies. Such agencies are detailed in the table below.

Table 5-5: Relevant agencies controlling hazards/ emergencies

Event	Agency
Law Enforcement / Emergencies	Police
Fire	Fire & Rescue NSW and/or NSW Rural Fire Service
Hazardous Materials	Fire & Rescue NSW



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Event	Agency
Flood	State Emergency Service
Storm and Tempest	State Emergency Service

The project team will adopt the operating procedures for managing emergencies and unplanned incidents that are addressed in the ISJV-SSERP.

In the event of a traffic accident occurring within the construction work sites or at other locations affected by the works, the project team is required to record the facts and photograph the approach to the accident site including the location of all safety devices and signs as soon as possible after the accident. A report with this information must be forwarded to TMC, RMS and WorkCover within two days of the occurrence of the accident.

In addition, the project team will employ an appropriate standard plan from the TCWSM, adjusting it as needed to suit the site conditions.

### 5.5 Maintenance of Access to and Safety of Transport networks, Parking, and Property

The majority of property, parking and transport networks along the worksite would not be by the works.

Residential and other stakeholder's access remains unimpeded due to the majority of the works occurring in land which has been acquired for the purposes of the construction of the project.

The areas where there are interfaces and likely access impacts are:

- Cross-streets;
- Car parking areas; and
- Bus access points.

These items are described following.

#### 5.5.1 T-Way Stations:

As described in Section 4.20

#### 5.5.2 Parking:

Burns T-Way Carpark: the Burns T-way carpark will be partially closed and additional car parking provided at a temporary car park near Balmoral bus stop. Riley T-Way Carpark: a new temporary Carpark will be constructed before the existing facility is taken out of operation. This reduces the impact on local residents looking for parking. ISJV acknowledges the importance of reducing the impact to Samantha Riley-T-Way as it services the most residents (Kellyville and Stanhope Gardens residents).

Tempus Street Carpark: the Tempus Street Carpark will be closed.

#### 5.5.3 Roads:

Balmoral Road: a haulage route passes through Balmoral Road to gain entry/exit to the site access point. This will result in minor interface impact with vehicles using this road.

Memorial Avenue: access to the haul road for works in Zone 1 and 2.

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White Hart Drive: egress to White Hart Drive from Zone 7.

Tempus Street: Street will remain operational and there will be impacts on road usage managed through the use of traffic control.

Schofields Road: the left in/left out entry/exit to laydown will result in minimal traffic impacts on Schofields Road.

### 5.5.4 Other Areas:

Rouse Hill Town Centre: A new bus layover is being constructed to take-over the functions of the existing Rouse Hill Layover.

Rouse Hill Town Centre Station: this will need to be relocated during the construction works. Temporary bus stops will need to be created along Tempus Street in order to facilitate the existing passengers, the layover area for the bus drivers and existing facilities is being relocated White Hart Drive in a new facility currently referred to within the Sydney Metro North West.

## 5.6 Manage Special and Major Events

The TMC defines a special / major event (in traffic management terms) as any planned activity that is wholly or partially conducted on a road, requires multiple agency involvement, requires special traffic management arrangements and may involve large numbers of participants and / or spectators. Major events would generally attract crowds in excess of 30,000 people. ISJV acknowledge that special events contribute to society and reinforce the values of Australians.

In 2003, the NSW Government published "The guide to Traffic and Transport Management for Special Events", which provides a comprehensive guide for organizing, managing and controlling special events. This guide was developed in consultation with representatives from: the NSW Premier's Department; TMC; RMS; Local Government Association; numerous NSW Local Councils; Police and members of the events industry.

TMC has the ultimate responsibility for road safety and traffic management of the road network. TMC is responsible for the assessment and coordination of special events, which TMC undertakes in consultation with event organisers, NSW Police and Local Council.

### Role of ISJV

ISJV acknowledge considerable planning is required to successfully move large volumes of people in an efficient manner to minimise disruption to normal transport patterns.

ISJV (as per Section 7.4 of the SWTC) will openly and actively participate in regular forums, communicate and corporate in the management process with the TMC, event organisers and relevant Project Managers and Clients as required.

Special / major events occurring near SVC Works include, but are not limited to:

- Rouse Hill Markets (Rouse Hill)
- Lennon Bros Circus (Castle Hill Showground)
- Orange Blossom Festival (Castle Hill town centre)
- Run for the Hills (Various)
- Christmas Lights Closures (Castle Hill town centre)
- Sydney Country Music Festival (Bella Vista)
- Castle Hill Show (Castle Hill Showground)
- Castle Hill Growers Market (Castle Hill Showground)

### Classes of special events

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Special / major events are generally categorized based on the potential disruption to traffic and transport systems, and the disruption to the non-event community. The four broad categories are generally as follows:

**Major** - is an event that impacts major traffic and transport systems and there is significant disruption to the non-event community. For example: an event that affects a principal transport route, or one that reduces the capacity of the main highway through a country town.

**Minor** - is an event that impacts local traffic and transport systems and there is low scale disruption to the non-event community. For example: an event that blocks off the main street of a town or shopping centre but does not impact a principal transport route or a highway.

**Local** - is an event with minimal impact on roads and negligible impact on the non-event community. For example: an on-street neighbourhood Christmas party.

**Police Controlled** - is an event that is conducted entirely under Police control (but is not a protest or demonstration). For example: a small march conducted with a Police escort.

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### 6 COMPLIANCE MANAGEMENT

#### 6.1 Organisation Structure

ISJV's Project Team organisational structure and overall roles and responsibilities are outlined in Section 6.2 of the CEMP. Figure 20: Construction traffic management organisation structure outlines the organisation for the implementation of construction traffic management. The Technical Services and Interface Manager reports to the Project Director (refer to the Project Management Plan)

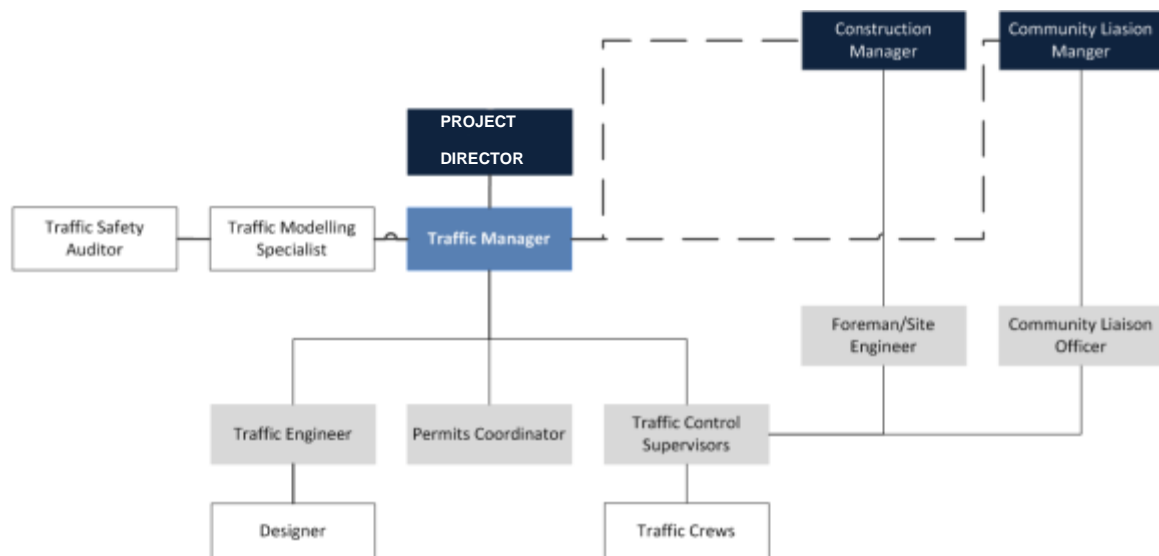


Figure 20: Construction traffic management organisation structure

#### 6.2 Roles and Responsibilities

Overleaf is a summary of key information for key roles related to the Construction Traffic Management Plan. For full details of the roles and responsibilities on the SVC project please refer to the PMP.

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Role	• Minimum Skills	Traffic Related Responsibilities
Traffic Manager (Traffic and Transport Representative)	<ul style="list-style-type: none"> <li>• Recognised and appropriate traffic management and / or traffic planning qualifications</li> <li>• 15 years' experience in relevant roles on projects similar to SVC Works</li> </ul>	<ul style="list-style-type: none"> <li>• Review and authorise traffic management strategies</li> <li>• Coordinate the wider organisational strategy to support the Construction Traffic Management Plan and its implementation</li> <li>• Manage traffic and transport for ISJV activities in line with all contract requirements outlined in section 3</li> <li>• Liaise with relevant authorities, Transport Management Centre</li> <li>• Attend the Traffic and Transport Liaison Group meetings</li> <li>• Maintain list of onsite and offsite personnel who are suitably trained to provide a response to issues</li> <li>• Coordinate activities with traffic engineer/s</li> <li>• Develop and maintain personal contact with Local Councils (BCC, THSC), emergency services, RMS Police and other parties</li> <li>• Meet with the construction managers and construction staff to obtain program forecasts and ensure the requirements of the CTMP and CTMSPs will be implemented</li> <li>• Establish a program for training of personnel in emergency procedures and traffic management; ensure these issues are addressed at site inductions and toolbox meetings</li> <li>• Be responsible for the establishment and operation of the organisation charged with implementation of the CTMP/ CTMSPs/ CTCPs</li> <li>• Implement procedures/processes for the development/approval and implementation of CTMP / CTMSPs and CTCPs</li> <li>• Implement procedures to guide Area Sydney Metro SVC Managers in their responsibilities under the various contract documents in relation to traffic and transport management.</li> <li>• Maintain a register of all incidents/accidents/complaints, including actions taken. Maintain a similar register for requests for information from the public</li> </ul>
Traffic Modelling Specialist, as required	<ul style="list-style-type: none"> <li>• Recognised and appropriate traffic management and / or traffic planning qualifications</li> <li>• Significant experience in modelling complex traffic systems</li> </ul>	<ul style="list-style-type: none"> <li>• In consultation with the Traffic Manager, develop traffic modelling to inform the design and implementation of general and site specific traffic management strategies</li> <li>• Maintain data to support the evaluation of traffic management plans</li> <li>• Determine requirements of traffic data collection and timing</li> <li>• Liaise with ISJV Design Team and Traffic Control Supervisor in developing Stage construction plans and CTCPs</li> </ul>

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<p>Traffic Control Supervisor</p>	<ul style="list-style-type: none"> <li>• Qualified to the TCWM course (i.e. holds a current Implement TCPs)</li> </ul>	<ul style="list-style-type: none"> <li>• The Traffic Control Supervisor is the traffic subcontractor's supervisor and will have delegated authority from, and responsibility to, the Traffic Manager for:</li> <li>• Implementing the CTMPs and CTCPs on site in consultation with Construction Managers and Permits Coordinator</li> <li>• Maintaining the CTCPs records</li> <li>• Assessing and monitoring subcontractor's capabilities and performance in respect of site activities</li> <li>• Ensuring the safe passage of traffic at all times</li> <li>• Ensuring everyone on site is inducted and wears the appropriate approved clothing</li> <li>• Driving through the site to inspect the traffic control layout, recording any deficiencies and the action taken to rectify them</li> <li>• Ensure that First Aiders are available on site all the times</li> <li>• Report incidents including those that are unrelated to the construction activity, including near misses to Traffic Manager/OHS Manager</li> <li>• Responsible for</li> <li>• Daily Pre-start and pre-close down inspections of short-term traffic control</li> <li>• Weekly inspections of long-term traffic control</li> <li>• Night inspections of long-term traffic control and</li> <li>• Pre-opening inspections of minor temporary traffic switches</li> </ul>
<p>Traffic Engineer(s) Responsible for the Work Activity</p>	<ul style="list-style-type: none"> <li>• Recognised relevant qualifications</li> <li>• Qualified to the TCWM course (i.e. holds a current Implement TCP)</li> </ul>	<ul style="list-style-type: none"> <li>• Assists in the delivery of the road safety and traffic management objectives outlined in the CTMP and CTMSPs</li> <li>• Plans all work activities and identify the required traffic management arrangements to facilitate the works as required</li> <li>• Liaise with the TMC and Permits Coordinator and ensure relevant ROLs and ROPs have been obtained prior to any works being implemented</li> <li>• Liaises with the Traffic Control Supervisor and Traffic Crews in the planning and implementation of the required traffic management arrangements</li> <li>• Conducts regular inspections (including pre-starts) of traffic controls and where necessary instructs the rectification of deficiencies</li> <li>• Allocates plant, equipment and human resources for the works including the provision of the temporary traffic control arrangements</li> <li>• Conducts and keeps records of daily and weekly (day and night) inspections of the traffic control arrangements, assist audits and where necessary rectifies deficiencies</li> <li>• Assists Traffic Manager in the preparation of presentations to the TTLG</li> <li>• Provides all relevant reports as requested by the TTLG</li> <li>• Submits and / or keeps records of RMS Special Permits Section appropriate application for over dimension (height/ weight) and dangerous goods vehicles</li> </ul>

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Permits Coordinator - Traffic Engineers Delegate	<ul style="list-style-type: none"> <li>Recognised relevant qualifications</li> <li>Qualified to the TCWM course (i.e. holds a current Prepare Work Zone)</li> </ul>	<ul style="list-style-type: none"> <li>Preparation of CTCPs to facilitate the works in consultation with Traffic Engineer and Construction Managers and obtains approval from the Traffic Manager</li> <li>Maintains register of Road Occupancy Licence and Special Permit approvals</li> <li>Submits in a timely manner relevant ROLs to TMC for approval</li> <li>Provides advice to Traffic Engineer, Construction Managers and Traffic Control Supervisor expected timing of approvals</li> </ul>
Foreman	<ul style="list-style-type: none"> <li>Qualified to the TCWM course (i.e. holds a current Implement TCP)</li> </ul>	<ul style="list-style-type: none"> <li>Ensures compliance with the approved CTCPs</li> <li>Issues the required CTCPs and where relevant road occupancy approvals and speed zone authorizations to the traffic control crew and/or subcontractor/s</li> <li>Ensures adequate plant, equipment and human resources are made available for the installation and maintenance of temporary control devices</li> <li>Conducts pre-start inspections and regular night/weekly inspections of traffic control arrangements, and ensures all deficiencies are rectified</li> <li>Assists with the implementation of mitigation measures to address unsafe road conditions, and unusual traffic congestion</li> <li>Assists with the management of unplanned incidents, providing initial response to make the site safe</li> <li>Records unplanned incident details, and when traffic controls are in operation, including the installation and removal of regulatory signage</li> </ul>
Traffic Safety Auditor	<ul style="list-style-type: none"> <li>Level 3 Listing in the IPWEA Road Safety Auditor's Register</li> <li>Recognised and appropriate traffic management and / or traffic planning qualifications</li> <li>Recognised safety management and auditing qualifications</li> </ul>	<ul style="list-style-type: none"> <li>Schedule independent road safety audits as required</li> <li>Engage with the approval of the Traffic Manager independent Road Safety Auditor to undertake Road Safety Audits as required</li> <li>Report to Traffic Manager and TfNSW RMS RSA findings and determine remedial treatments required</li> <li>Liaise with Construction Managers implementation of remedial treatments as required</li> <li>Audit, provide advice and agreement to CTMPs/CTMSPs and CTCPs</li> <li>Monitor and assess traffic management implementation</li> <li>Maintain a register of RSAs as appropriate</li> <li>Maintains Stakeholder Database relative to Traffic and Transport Management (refer 7.4.3)</li> </ul>
Community Relations Manager	Refer to CLIP and PMP	<ul style="list-style-type: none"> <li>Advise Stakeholders and Businesses of upcoming works and likely impacts</li> <li>Liaise with the Traffic Manager in monitoring and assessing community traffic impacts</li> <li>Identify preferred methods for communication to address and implement plans of management for key stakeholders impacted by traffic issues</li> <li>Develop and implement communications strategies to address traffic-related community concerns</li> <li>Attend the TTLG meetings, as required</li> </ul>



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Construction Manager	Refer to the PMP	<ul style="list-style-type: none"><li>• Assist the Traffic Manager in the implementation and maintenance of the Construction Traffic Management Plans and devices</li><li>• Assist the Traffic Manager as requested in the performance of their duties</li><li>• Assist the Traffic Manager in maintaining a Register of ROLs and ROPs and their status</li><li>• Direct and assist field staff in the application of the TCP &amp; TMP and CTMPs</li><li>• Ensure that only adequately trained and qualified personnel are engaged in traffic control duties. Establish a dedicated communication link with the field crews and the site superintendents / supervisors</li><li>• Facilitate a training program to ensure an appropriate level of Traffic Control Certification for personnel engaged in traffic control duties</li><li>• Be familiar with, and undertake the instruction of, personnel in the operational aspects of the TCP and TMP, CTMPs and CTCPs</li><li>• Ensure all traffic management personnel, plant and equipment are available in a timely manner to meet the requirements of the construction program</li><li>• Develop work procedures to ensure the utmost is done to provide a safe working environment for employees and the safety of road users and the general public is addressed</li><li>• Brief field staff responsible for the carrying out of traffic management and incident / accident response activities if requested by the BMTMC operator</li><li>• Investigate, with the Manager Traffic, all traffic incidents</li><li>• Prepare reports for the Traffic Manager</li></ul>
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Table 6-1: Traffic management personnel, authority, skill level and roles

The Traffic Manager will liaise directly with the traffic and safety auditors, and on an ongoing basis with the Stakeholder and Community Relations Manager. Traffic management information will be communicated to the community as detailed in the ISJV-CLIP.

The Technical Services and Interface Manager will coordinate the integration of traffic related communication and strategy with broader project strategies.

### 6.3 Training

ISJV will provide appropriate training to ISJV personnel involved in traffic management, including training to achieve the requirements of the RMS Traffic Controller Certification policy in line with the TCWS Manual under the Traffic Management Code of Practice.

See the Project Training Management Plan for further details on training.

### 6.4 Communication

#### 6.4.1 Traffic Communication

Construction of the Sydney Metro SVC will affect a very broad group of stakeholders who require timely and useful information to ensure the traffic network is not unduly affected and impacts on the community are minimised. ISJV is committed to a proactive consultation process that invites stakeholder and community feedback to improve the safe and efficient implementation of traffic

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changes, including changes for pedestrians, cyclists and public transport, and the management of construction related traffic issues.

The communication and consultation strategy described in the ISJV-CLIP aims to ensure:

- Key stakeholder input is incorporated into traffic planning
- The travelling public, emergency services, the State, Independent Verifier, adjacent landowners and businesses are provided with ongoing, accurate and timely information on traffic changes in a form suitable to their needs
- Information provided enables the travelling public to optimise their travel options
- Property owners, businesses and community facility managers are consulted on traffic issues that directly impact them
- Clear protocols are in place to ensure required approvals are obtained prior to the publication or dissemination of information
- CTMSPs are supported by communication strategies to minimise the impact on the road and transport network
- Management of traffic incidents is supported by effective incident management communication protocols are detailed in the ISJV-SSERP.
- Provide 7 day – Traffic alert email – Issue traffic alert 7 days before changes to traffic and access arrangements by email to all key traffic and transport stakeholders
- Provide Real-time updates on traffic conditions and construction activity
- Advertise in local newspapers of significant traffic management changes, detours, traffic disruptions and work outside any working hours contained in the environmental documents at least 7 days before any detour, disruption or change occurs

### 6.4.2 Dissemination of Information

ISJV will employ a comprehensive range of communication tools to disseminate traffic information to assist road and public transport users, pedestrians and cyclists to plan their trips, make travel choices and understand the reasons for traffic changes in line with the ISJV CLIP aims.

### 6.4.3 Approvals of Public Information

ISJV will submit all traffic related communication materials for release to the community in relation to traffic and transport management to TfNSW for approval prior to distribution.

### 6.4.4 Stakeholder Management

ISJV will maintain a stakeholder database to ensure accurate distribution of traffic communication materials to all stakeholders.

All community enquiries relating to traffic will be recorded and will include the subsequent actions and closeout.

A summary of traffic issues raised by community members will be provided in a monthly report to the TTLG including action, response and status. The complete database is available for inspection by the IC.

Stakeholder database will be managed by the Community Manager.

### 6.4.5 Traffic and Transport Liaison Group (TTLG)

The NSW Government has established a TTLG to allow ISJV to inform the detail design of temporary and permanent traffic and transport measures and to inform ongoing management measures prior to and during construction of any Sydney Metro SVC activities that may impact the community and

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road/facility users. The TTLG will provide a forum for exchange of information and the discussion of issues associated with the CTMPs and traffic impacts associated with construction of the Sydney Metro SVC, T-Way operators.

The TTLG will:

- Identify the requirement for supplementary analyses and detailed modelling of traffic changes and impacts that have the potential to have a significant impact on traffic flow efficiency with the objective of informing and improving traffic management measures
- Consider major sporting and entertainment events and any other special event needs and, make reasonable and feasible short-term adjustment to the construction phase activities
- Be consulted on and will inform the preparation of the CTMPs, CTCPs and other associated plans
- Review ROL Applications to monitor potential cumulative impacts from multiple ROLs operating concurrently in one area.

ISJV will provide the TTLG with:

- Details of the timing of the implementation of traffic management
- All relevant reports as requested by the TTLG

Matters for TTLG discussion may include:

- Safety of road users and construction personnel
- Construction staging (existing or proposed)
- Traffic operations, including changes in traffic flows and traffic management works, parking, footpath alterations and public transport operations
- Community concerns and comments as they relate to traffic management
- Communication and consultation strategies and actions
- Summary of traffic accidents since the previous TTLG meeting

Traffic related issues raised in all other ISJV consultation forums, including the community liaison groups (CLGs), will be formally referred for attention to the TTLG and the response will be reported back to the stakeholder. A standing agenda item will consider community issues.

The TTLG is not responsible for approving CTMP, CTMSPs or CTCPs. The TTLG has no legal responsibilities and will not have any power to require any of the parties or their associates to act or refrain from acting in any way. ISJV's responsibility for traffic management will not be limited or affected by the existence of or determinations of decisions of the TTLG.

### 6.4.6 Chair and Membership

TTLG will be attended by ISJV's Traffic Representative and members will include nominated representatives of:

- Transport for NSW
- NSW Road and Maritime Services
- New South Wales Police Service
- Blacktown City Council
- The Hills Shire Council
- Hornsby Council
- Busways
- ISJV Traffic Communication Coordinator
- Relevant Area Managers or delegates, as required

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- Other relevant groups nominated by RMS or BCC/THSC
- Relevant emergency services

### 6.4.7 Traffic Coordination Group (TCG)

TfNSW has established a TCG to allow ISJV to inform the detail design of temporary and permanent traffic and transport measures and to inform ongoing management measures prior to and during construction of any Sydney Metro SVC activities that may impact the surrounding stakeholders and interface construction sites. The TCG will provide a forum for exchange of information and the discussion of issues associated with the CTMPs and traffic impacts associated with construction of the Sydney Metro SVC, T-Way operators, the TSC contractor, the ETTT Contractor, and Council/RMS or other road works.

The TCG will:

- Identify the requirement for supplementary analyses and detailed modelling of traffic changes and impacts that have the potential to have a significant impact on traffic flow efficiency with the objective of informing and improving traffic management measures
- Consider major adjacent works and, make reasonable and feasible short-term adjustment to the construction phase activities
- Be consulted on and will inform the preparation of the CTMPs, CTCPs and other associated plans
- Review ROL Applications to monitor potential cumulative impacts from multiple ROLs operating concurrently in one area.

ISJV will provide the TCG with:

- Details of the timing of the implementation of CTMPs/CTCPs
- A schedule of CTMPs/CTCPs submitted and those proposed to be submitted
- All relevant reports as requested by the TCG

Matters for TCG discussion may include:

- Safety of road users and construction personnel
- Construction staging (existing or proposed)
- Traffic operations, including changes in traffic flows and traffic management works, parking, footpath alterations and public transport operations
- Community concerns and comments as they relate to traffic management
- Communication and consultation strategies and actions
- Summary of traffic accidents since the previous TCG meeting

Traffic related issues raised in all other ISJV consultation forums, including the community liaison groups (CLGs), will be formally referred for attention to the TCG and the response will be reported back to the stakeholder. A standing agenda item will consider community issues.

The TCG is not responsible for approving CTMP, CTMSPs or CTCPs. The TCG has no legal responsibilities and will not have any power to require any of the parties or their associates to act or refrain from acting in any way. ISJV's responsibility for traffic management will not be limited or affected by the existence of or determinations of decisions of the TCG.

### 6.4.8 Input from Other Traffic Stakeholders

Other key traffic stakeholders who represent significant community and road user groups may be invited to attend specially convened consultation sessions involving TTLG members.

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These stakeholders include:

- The NSW Taxi Council
- Bicycle NSW
- The NSW Trucking Association
- Sydney Trains - RailCorp
- The Sydney Metro TSC Contractor.

The TTLG will meet every month. The meeting frequency may be reduced as agreed by TfNSW and/or RMS and/or BCC/THSC.

Meetings will be held at the ISJV Sydney Metro North West SVC office, unless otherwise notified to members.

### 6.5 Monitoring and Inspections

A program for the regular inspection of traffic infrastructure will be implemented. Requirements and responsibilities in relation to environmental monitoring and inspections are documented in Section 6 of the CEMP. Requirements and responsibility in relation to the monitoring and protection of existing infrastructure are documented in the Monitoring and Protection plan.

In addition to the inspections conducted by the Independent Certifier, ISJV is required to inspect the temporary traffic controls during the construction phase, focusing on monitoring compliance against the CTCPs and identifying safety hazards, to enable implementation of corrective solutions.

The Traffic Manager, or delegate, will be required to conduct four main types of inspections on projects:

- Daily Pre-start and pre-close down inspections of short-term traffic control
- Weekly inspections of long-term traffic control
- Night inspections of long-term traffic control and
- Pre-opening inspections of minor temporary traffic switches

These inspections will be required to be carried out in accordance with the RMS TCWSM. That is:

Daily Inspections:

- “CTCPs” - Traffic Team Leader (holding a ‘Implement TCP’ Card) will check and record that all traffic control devices have been implemented and sign off/date the record. The record of these inspections will be done on the actual CTCPs by ticking each sign, safety barrier etc. to verify that the inspections are done. This will also be inspected by the Traffic Subcontractor’s supervisor and co-signed on the CTCPs for acceptance after review
- Daily Traffic Controls Risk Assessment - This identifies information regarding “Checks”, Start/Finish Times, etc. using the subcontractor’s checklist. The Traffic Team Leader or Traffic Controller will fill in information stipulated in the checklist and will sign off date the checklist. This will also be inspected by the Traffic Subcontractor’s supervisor and co-signed on the checklist for acceptance after review
- In addition, the ISJV project team will inspect relevant CTCPs and note any actions using the “Daily Traffic Controls Inspections Checklist”.

Weekly Inspections (Random CTCP setup):

- “Traffic Management Audit Checklist” will be utilised by ISJV’s Traffic Manager, or delegate and Traffic Subcontractor’s Supervisor and both will sign off/date the checklist

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The Traffic Manager, or delegate, will also be required to monitor traffic management and traffic controls to assess compliance with the conditions of ROLs, including:

- As-built layouts for compliance with approved traffic control plans, including sign maintenance and delineation (Daily)
- Timing and duration of road occupancies (Weekly)
- Qualifications of traffic control personnel (Weekly)

Other inspection checklists contained in the RMS TCWSM, or equivalent will be utilised (or modified to suite local requirements) for recoding the inspections.

Records of inspections of road conditions and traffic control measures will be maintained by ISJV's Traffic Manager, or delegate.

### 6.6 Auditing

Audits (both internal and external) will be undertaken to assess the effectiveness of traffic management measures, compliance with this CTMP and each work site CTMSP and associated CTCPs, COAs, REMMs, Deed, SWTC, CEMF and other relevant approvals, licenses and guidelines.

ISJV will undertake audits as detailed in the PMP project audit schedule, which provides procedures/processes for quality audits and the issuing of Non Conformance Reports and rectification requirements.

#### 6.6.1 Road Safety Auditor

ISJV use Independent Road Safety Auditors (RSA) whose primary function will be to audit, provide advice and agreement to CTMP, CTMSPs and CTCPs wherever necessary prior to submission to statutory authorities for approval as per the requirements of Exhibit A Annexure 1 Pt 1 Clause 5.11 and Exhibit A Annexure 2 Part 1 Clause 4.6 and 4.7 of the Sydney Metro North West SVC Deed.

The auditors also undertake onsite, post-implementation road safety audits of long term CTCPs within the first 24 hours of the initial implementation of the CTCP and submit report to ISJV within a week of the inspection. The results of the audit, along with any actions taken or to be taken by ISJV, will be submitted to THSC / BCC / RMS within week of implementation.

### 6.7 Reporting

ISJV will ensure the accurate recording of all relevant details and records in accordance ISJV procedures in relation to reporting requirements and record keeping relating to CTMP/CTMSPs/CTCPs/ Post Implementation/ Inspections and Maintenance. In addition to this, ISJV will provide a monthly report to RMS, THSC, BCC, and TMC as appropriate with a copy provided to CNI and the IV detailing (via TTLG):

- Network traffic performance
- Traffic accidents as a result of Sydney Metro North West SVC activities
- Public complaints due to Sydney Metro North West SVC activities impacting on traffic
- All current Sydney Metro North West SVC activities affecting traffic, pedestrian pathways and bikeways
- Sydney Metro North West SVC Activities proposed within the following 3 weeks

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## 7 REVIEW AND IMPROVEMENT

### 7.1 Continuous Improvement

Continuous improvement of this CTMP and individual work site CTMSPs and associated CTCPs will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of traffic management
- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from process improvement and
- Make comparisons with objectives and targets

Refer to ISJV-SVC-PMS MSP 45 Improvement Opportunities Corrective & Preventive Action

### 7.2 CTMP Update and Amendment

Revisions to this CTMP and individual work site CTMSPs will be made as required as outlined in Section 6 of the CEMP.

Only the Construction Traffic Manager (in consultation with the traffic and environmental management team) can amend this CTMP and individual work site CTMSPs.

The revised CTMP and CTMSP be endorsed by the IC and reviewed by the Principal's Representative prior to commencement of any related activities or work.

A copy of the updated CTMP and CTMSPs and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure (refer to Section 6 of the CEMP).

This plan is to be reviewed and amended after any incident occurs within the plan or sub-plan.